DOCUMENT RESUME

ED 452 418 CE 081 708

AUTHOR	McIntyre, John, Ed.; Barrett, Mary, Ed.
TITLE	VET [Vocational Education and Training] Research: Influencing Policy & Practice. Proceedings of the National Conference of the Australian Vocational Education and Training Research Association (AVETRA) (1st, Sydney, Australia, February 16-17, 1998).
INSTITUTION	Australian Vocational Education and Training Research Association, Alexandria.
ISBN	ISBN-0-9586188-0-1
PUB DATE	1998-02-00
NOTE	366p.; For 1999 and 2000 proceedings, see CE 081 709-710. Assisted by the Australian National Training Authority.
AVAILABLE FROM	Australian Vocational Education and Training Research Association, Locked Bag 70, Alexandria NSW 1435; Web site: http://www.avetra.org.au ($19.95 Australian, members; $39.95 Australian, non-members).
PUB TYPE	Collected Works - Proceedings (021)
EDRS PRICE	MF01/PC15 Plus Postage.
DESCRIPTORS	*Access to Education; Adult Education; Community Study; *Competency Based Education; Delivery Systems; Demography; Disadvantaged; Educational Demand; Educational Development; *Educational Research; Employee Attitudes; Employer Attitudes; Females; Foreign Countries; Industry; Inplant Programs; Internet; Job Training; Literacy Education; Models; Needs Assessment; Networks; Nonmetropolitan Areas; Organizational Change; *Partnerships in Education; Police Education; Policy Formation; Postsecondary Education; Productivity; Professional Development; Program Implementation; Public Policy; Research and Development; *Research Utilization; School Business Relationship; Secondary Education; Small Businesses; Student Attitudes; Student Evaluation; Sustainable Development; Theory Practice Relationship; Transfer of Training; *Vocational Education; Womens Education; Workplace Literacy
IDENTIFIERS	*Australia; Flexible Learning; Online Courses

ABSTRACT

These proceedings consist of 46 papers on the influence of vocational education and training (VET) research on policy and practice. These papers are grouped into these categories: impact of research; equity in participation; partnerships and stakeholders; practice and practitioners; research and policy; learning, work, and organizations; and VET, markets, and the economy. They are "Editorial Introduction: Emerging Interests in VET Research" (McIntyre, Barrett); "Opening Address: Importance of VET Research Influencing Policy and Practice" (Ellison); "Presidential Address" (Maglen); "Overview of Australian VET Research" (Robinson); "Impact of Research on VET Policy, Practice, and Performance" (Smith, Smith); "Use and Influence of Research in VET" (McDonald); "Forging a Convergence Amongst Imperatives for VET" (Stevenson); "Conference Dinner Address: VET Where to from Here?" (Ramsey); "Drowning, Not Waving" (Volkoff, Golding); "Demographic Factors Influencing the Likelihood of Success in VET" (Ball); "Women Training for Transitions" (Barrett); "What's Different Away from the Rat Race?"

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(Kilpatrick, Bell); "Teaching and Learning Needs" (Crump, Anderson); "VET Research Through Partnerships with Stakeholders" (Henry, Arnott); "Employers' Perceptions of How Well the VET System Serves the Training Needs of Their Industry" (Werner); "Industry and Academia" (Weaver); "Evaluating the Contribution of Competency-Based Training" (Mulcahy, James); "Entereprise-Based Research and Organizational Development in VET Providers" (Seddon); "Unravelling Independent Provision for Occupational Learning in the Hunter Region 1900-90" (Barker, Holbrook); "Mapping Teachers' Work, Charting New Futures" (Kell et al.); "Professional Development in VET" (Simons, Harris); "Learning to Change, Changing to Learn" (Smith et al.); "Issues and Challenges in Consortia-Based Delivery of Professional Development for VET in Schools" (Ward et al.); "Reviewing the Competency Standards for Assessment and Workplace Trainers" (Gillis et al.); "Analysis of Training Needs" (Harris, Wyatt); "Internet-Based Training" (Webb); "Getting the Message Out" (Guthrie); "What Do We Mean 'Research Influences Policy'?" (McIntyre); "Convergence of Vocational and Adult Education in Learning Communities" (Falk); "Failure in Imagination" (Childs, Wagner); "From the Billabong to the Mainstream?" (Kell); "Policy Issues Related to Flexible Modes of Delivery of VET" (Cummings); "Informing Policy and Practice at the Micro Level" (Clayton, House); "VET Policy and Research" (Billett); "Learning, Workplaces, and Public Policy" (Hawke); "Recognition of Informal Learning" (Hager); "Workplace Based Training in Small Business Enterprises" (Robertson); "Do Skills Transfer?" (Misko); "Emerging Truths in Public Sector Training" (Sheehan); "What About the Workers?" (Foley); "Organizational Models for Change Implementation" (Harper); "Workplace Based Learning Degrees" (Garrick, Kirkpatrick); "User Choice in Markets at Risk" (Noble et al.); "VET Policy and Sustainability" (Mulqueeny); "VET and Productivity" (Maglen, Hopkins); and "Impact and Consequences of Markets in VET" (Andersen). (YLB)

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Influencing policy and practice

Proceedings of the first national conference of the Australian Vocational Education and Training Research Association, Sydney, February 1998

Edited by John McIntyre and Mary Barrett

AVETRA

Australia's
national
association
for VET
research

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VET Research

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and Training Research Association, Sydney
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John McIntyre & Mary Barrett

AVETRA

AUSTRALIAN VOCATIONAL EDUCATION AND
TRAINING RESEARCH ASSOCIATION

Published by
The Australian Vocational Education and Training Research Association
Locked Bag 70
Alexandria NSW 2015 Australia
Website: http://www.avetra.org.au/

Proceedings © AVETRA 1998
Individual papers © Authors 1998

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National Library of Australia
cataloguing-in-publication data

Australian Vocational Education and Training Research Association VET
Research: Influencing policy and practice
ISBN **0 9586188 0 1**

1. Vocational education and training - Australia
2. Educational research - Australia
I. McIntyre, John
II. Barrett, Mary
374.01305

Printed by the University of Technology Sydney. Cover design by Publications Unit, UTS.

This AVETRA publication has been assisted by the
Australian National Training Authority

Contents

The impact of research

Editorial introduction: VET research, interest and influence	John McIntyre & Mary Barrett	1
Opening address	Senator Chris Ellison	5
Presidential address	Leo Maglen	8
An overview of Australian vocational education and training research	Chris Robinson	12
The impact of research on VET policy, practice and performance	Chris & Joy Selby Smith	23
The use and influence of research in vocational education and training	Rod McDonald	37
Forging a convergence amongst imperatives for vocational education and training	John Stevenson	45
Conference dinner address: Vocational education research - where to from here?	Gregor Ramsey	56

Equity in participation

Drowning not waving: equity target groups in the marketplace	Veronica Volkoff & Barry Golding	60
Demographic factors influencing the likelihood of success in VET	Katrina Ball	70
Women training for transition: enhancing women's business involvement	Mary Barrett	76
What's different away from the rat race? Issues for VET in non-metropolitan Australia	Sue Kilpatrick & Rowena Bell	82
Learning needs, disadvantage and student diversity in vocational education in TAFE	Stephen Crump & Tony Anderson	92

Partnerships and stakeholders

VET research through partnerships with stakeholders	John Henry & Allan Arnott	99
Employers' perceptions of how well the VET system serves their industries' training needs	Mark Werner	104
Industry and academia: building networks and alliances	Graham Weaver	113
Evaluating the contribution of competency based training	Dianne Mulcahy & Pauline James	118
Enterprise-based research and organisational development in VET providers: patterns and possibilities	Terri Seddon	128
Unravelling independent provision for occupational learning in the Hunter region 1900-1990	Ray Barker & Allyson Holbrook	135

Practice and practitioners

Mapping teachers' work, charting new futures	Peter Kell, Jo Balatti, Angela Hill, Sandy Muspratt & John Blakely	141
Professional development in VET: How significant is it in today's policy context?	Michelle Simmons & Roger Harris	155
Learning to change, changing to learn: Stages of concern in the implementation of competency-based training	Erica Smith, Doug Hill & Janene Lobegeier	162
Issues and challenges in consortia-based delivery of professional development for VET in schools	Kevin Ward, Pam St.Leger, David Beckett & Graeme Harper	171
A review of the workplace standards for assesment and workplace training	Shelley Gillis, Patrick Griffin, Ralph Catts & Ian Falk	179
Analysis of training needs: A case study of the crime prevention 'industry'	Roger Harris & Frank Wyatt	186
Internet-based training: Do students like it as much as trainers think they should?	Greg Webb	195
Getting the message out: disseminating the products of the national research and evaluation program	Hugh Guthrie	205

Research and policy

What do we mean 'research influences policy'?	John McIntyre	211
The convergence of vocational and adult education in learning communities	Ian Falk	217
A failure in imagination: Towards a critical review of VET sector orthodoxy	Merrilyn Childs & Regine Wagner	229
From the billabong to the mainstream ? Australian training and literacy policy from 1974 -1998	Peter Kell	235
Policy isses related to VET: Lessons from regional Australia	Rick Cummings	246
Informing policy and practice at the micro level	Berwyn Clayton & Robyn House	252
VET policy and research: Emerging issues and changing relationships	Stephen Billett	258

Learning, work & organisations

Learning, workplaces and public policy	Geof Hawke	267
Recognition of informal learning: challenges and issues	Paul Hager	273
Workplace based training in small business enterprises: an employer survey	Ian Robertson	282
Do skills transfer? An empirical study	Jose Misko	289

Emerging truths in public sector training	Maire Sheehan & Jane Cartier	301
What about the workers: Workers' informal training and workplace change	Griff Foley	308
Organisational models for change implementation	Graeme Harper	313
Workplace learning degrees: Critical questions for research	John Garrick & Denise Kirkpatrick	321

VET, markets and the economy

User choice in markets at risk	Charles Noble, Doug Hill, Erica Smith & Andrew Smith	327
Vocational education and training policy and sustainability	Jitka Mulqueeny	334
VET and productivity: Some possible lessons for Australia	Leo Maglen & Sonnie Hopkins	340
Impact and consequences of markets in VET: research issues	Damon Anderson	347
Author index		357

Editorial introduction: Emerging interests in VET research

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In the introduction to a set of proceedings such as these, it is usual for editors to reflect on the extent to which the proceedings addressed the conference theme. It is a timid pair of editors that will not venture some critical remarks on what is and what is not said in the papers about the theme, and what new insights they bring to it. So having laboured over files foreign and familiar, we exercise our prerogative to do so.

The conference theme was the influence of VET research on policy and practice. What insights did papers and presentations bring to these theme or, to put this more sympathetically, how did this theme resonate with the current interests of VET researchers as they are expressed in these Proceedings?

We can begin to answer this question by looking at the categories of papers. In the Proceedings we have retained the categories used at the conference. The categories themselves reflect the kind of interests operating in the field, including the research agenda funded by the Australian National Training Authority (ANTA) through the National Research and Evaluation Committee (NREC) program. The following are a few observations about the research interests represented in these papers:

- *equity in participation* .Who gets access to vocational education and training (VET), and what factors beyond individual control make completing training more or less likely, seem set to be areas of ongoing critical scrutiny.
- *partnerships and stakeholders* This was not a strong area at the conference in terms of the numbers of papers presented. Papers grouped under this theme mostly presented successful case examples of close relationships between VET institutions and industry.
- *practice and practitioners* .This was the largest group of papers, reflecting the strong interest at the conference in research aimed at improving what practitioners do in the field.
- *research and policy relationships* . This emerged as an important sub-theme of the conference, with vigorous questioning of a number of assumptions underlying VET research and its influence on policy. The most important questioning centred on the assumed neutrality of political agendas in determining VET policy, leading to the view that the links between research and policy are not simple or necessarily satisfactory.
- *learning, work and organisations* . The complex links among these three elements and the ways they constitute both the venue and the vehicle for VET also emerged as a key area of interest and conceptual development and critique in VET research.
- *markets and the economy* . This area received surprising little attention given its currency in general debate about VET policy. We might attribute this to a certain tentativeness on the part of new researchers about tackling such a broad topic, though a vigorous critique of the role of markets and the economy in VET policy issues emerged in several papers dealing with research and policy relationships.

As a result of the controversies that emerged from the conference theme of 'the influence of research on policy and practice', questions were raised about what role the new Australian Vocational Education and Training Research Association (AVETRA) should take in VET research. The final plenary session culminated in the expression of the need for VET researchers to be critical of the ways in which research is influenced by the demands of policy and practice in VET. Leo Maglen made the point in his presidential address:

> [AVETRA] should ... be an association of independent researchers, who are free to conduct their research without undue influence from their employers, whether they be in the public or private sector, in higher education or the TAFE sector, in industry or wherever; from research funding bodies or from government policy makers.
>
> Of course, we all need to work within the terms of our employment, to submit to the requirements of funding bodies and to respond to requests of policy makers. However, at all times we need to act with professionalism and integrity, to pursue our research rigorously, objectively and ethically, and to subject VET policy and practice to critical reasoned analysis.

In our view there is evidence in these papers for the vigour with which research interest in VET is being pursued and for the analytical and critical nature of that pursuit. But why should it be necessary to assert the need for a critical approach to research? Part of the reason perhaps is the way that the economic and policy imperatives (and the funding regimes that have done much to stimulate and underwrite research activity in the field) have demanded relevance and usefulness from VET researchers. Chris Robinson referred to the results of this funding effort in his review of the field:

> The striking thing about the research reviews examined in this paper is ... the sheer volume of VET research that has been carried out in Australia over the 1990s, particularly in the last two or three years. While not every study reviewed was an Australian one, most were, and while some of the studies were examined in more than one of the reviews of research, in total the eleven research reviews referred to in this paper looked at around 700 research papers and reports in their reviews of VET research literature in the 1990s. Quantity of VET research is now not a major issue in Australia. The next challenge is the quality of research undertaken.

The keynote addresses obviously canvassed the question of the influence and impact of the VET research that has been conducted since the first round of research advisory committee funding first began to have an impact on the field. There is no doubt that among the peculiarities of the field are its concern for research that is relevant to policy and practice, encouraged by unambiguous state funding priorities. Two of the keynote papers reported on a project funded to assess such an impact. It is appropriate that policy relevance should be a concern, and the papers reflect the research agendas that have constructed the field of VET research, and their critical engagement with those agendas.

Yet the keynote papers by McDonald and the Selby-Smiths refuse any simple relationship of research, policy and practice and also insist on the complexities of the things researched. At the same time, they are not short on evidence that research is indeed speaking to policy and practice. There is an appropriately complex view of the field of VET, when it is acknowledged that there are competing value sets and philosophies in play. Rod McDonald concluded, in summing up the influence of research:

> ... the greatest difficulty arises from the fact that ... policy decisions and changes in practice are influenced by many factors. Research is sometimes one of these. But, perhaps in VET more strongly than in some other areas - due to a decision-making setting that is described as complex, complicated, dynamic and contested - when it is, it is often because it shapes perceptions and agendas, and those making decisions are often unaware of the research on which it might be (indirectly) based.

The papers in this volume support the conclusion that one of the strengths of the emerging field is its preoccupation with empirical research. VET researchers also have a characteristic practicality and application to task, which might be crudely called the 'heads down and bums up' attitude. This is a great strength in a research context where relevance and impact are high priorities in allocating research funding. There are many papers reporting work in progress or completed projects. This is not surprising, given the pragmatic culture of VET research and the hands-on culture of TAFE institutions.

However, the debit side of this empirical emphasis is the relative lack of theoretical papers in the proceedings. This is no doubt because the conference theme seemed to call for a demonstration (or was it a celebration?) of the impact of VET research on policy and practice. Where then are the theoretical interests in the field?

Such observations together with the strong focus on a critical role for the new Association lead to the conclusion that the emerging VET research culture deserves more critical attention from researchers than it has been getting before now. VET research culture is itself a researchable topic, not something outside the legitimate scope of research. Within the collection of papers are some which call for more critical analysis of the context in which research is being produced, more reflection and debate about the agendas of VET research. A laudable concern for results and applicability of research need not deflect attention from questions about the culture and context in which research is being produced.

The paper by John Stevenson points to the need to take up those contemporary issues defining the context of VET research and its research agendas and practices. He argues the need to re-examine these influences on VET institutions:

> ... VET and its major provider, TAFE, constantly change shape as different interests exert new pressure on its overall shape. These changes in shape are not continuous with old shapes, anchored in some unchanging philosophy of what vocational education and training is, but in abruptly changing ideas of the very essence of this education. The latest interest is in what relationship should exist between TAFE and universities; something on which I look with some nostalgia, as when I addressed this same matter in 1987 (Stevenson 1987), my arguments for more continuity and convergence across educational sectors were thought, by powerful people, to be heresy.
>
> The negative constructions of vocational education and training and the continuous pressures for abrupt and discontinuous changes in the essence of what constitutes vocational education and training work against continuity, coherence and clarity. My intention is to identify and characterise some contemporary issues (most of which are ongoing), consider their origins, suggest the goals that are implicit, and consider how they might be made to converge.

Perhaps VET researchers haven't yet much examined who they are and what is shaping their identities as researchers. Where is the research that is attempting to model and critically examine the big picture issues transforming the nature of vocational education institutions and practices? Now that AVETRA has been successfully established, perhaps it is time to begin to engage in more critical examination of the emerging research culture, not only in terms of its differences from education at large, but also in terms of its linkages and commonalities.

A future conference could be one which focuses on VET researchers and the context of VET research, looking at how the rapid changes in VET and post-compulsory education generally are shaping the research effort and research agendas. Indeed, the next conference with its theme of quality and diversity in VET research promises to provide opportunities for this kind of exploration.

With this in view, we could as an Association explore some of the tensions which emerged in the final plenary discussion about what it means to publish the papers in a formal set of proceedings. We hope that publication will mean a number of good things: that the papers would be easily available to others seeking to learn from the work of Australian VET researchers, and that over time we will be able to track our own progress on many fronts. We would in no sense want to diminish the pragmatic traditions of VET research when many of its strengths result from the different perspectives of universities, TAFE institutes, consultants and other agencies. There is plenty of common ground and considerable strength to be developed from interaction and collaboration of different institutions, all of whom are adapting to a range of forces in the educational policy environment. We might ask: where is the research agenda that is exploring these institutional changes? A few papers in the collection are beginning to point to this kind of research.

Finally, we need to say that in editing the papers we have exercised the usual editorial discretion, hopefully without too heavy a hand, in order to achieve some consistency across the forty papers. Time has not permitted as thorough or consistent an editorial job as we would have liked and of course we have had to deal with the usual difficulties academics have with following guidelines of any kind. We have applied the guidelines originally issued, which called for simplicity and economy in presentation, so that some papers have been changed more than others because they conformed less. Papers that were over-long have been shortened, multiple headings have been reduced, and following NCVER style, capitalisation and punctuation have been minimised. We have done our best to regularise citation practices to conform to NCVER style, though this could be a life's work.

No doubt there are many places where we have failed to follow our own strictures given the limited amount of time available for the task, but we hope that too much has not been sacrificed to the goal of achieving early publication of the Proceedings.

Opening address: The importance of VET research influencing policy and practice

Senator Chris Ellison
Minister for Schools, Vocational Education and Training

Thank you for inviting me to officially launch the Australian Vocational Education and Training Research Association and open your inaugural national conference.

I would like to take this opportunity to congratulate the membership of AVETRA for their commitment to the development of a strategic vocational education and training research network.

There have been significant changes in the last decade to the structure and delivery of vocational education and training. Government is now working with business in a very dynamic phase of reforms in the sector.

Since coming to office, the Federal Government has worked with the States and Territories to focus the direction of reform and increase the pace of change. With strong industry leadership, reforms such as New Apprenticeships, the National Training Framework and User Choice are changing the face of vocational education and training in Australia.

These changes have been brought about by the need to develop a training system that can help Australia to compete effectively in a highly competitive global economy. We have also had to combat high levels of youth unemployment by providing real job opportunities for young Australians based on quality, recognised training.

As well as meeting these challenges we will make our vocational education and training system even more effective and efficient in the future.

Policy decisions that we make about the future of the VET sector need to be firmly grounded in quality research and analysis of developments in Australia and internationally. There is an ongoing need for better links between policy and research. Policy makers, training departments and authorities require relevant and timely research, that can feed into important public policy decision-making processes.

In the past, the outcomes of research and evaluation projects have often not been readily available to policy makers, practitioners, and other important stake holder groups. In order to make a difference for the sector, vocational education and training research and evaluation have to meet their mark and be accessible to those who need them.

To this end, Commonwealth and State and Territory training authorities, the Australian National Training Authority and the National Centre for Vocational Education Research have developed new national arrangements for monitoring and analysing vocational education and training operations and outcomes. This new streamlined approach will provide for better policy development and more effective management of the sector.

The new arrangements include the establishment of the Performance Review Committee (PRC), the National Advisory Committee on Vocational Education and Training Statistics (NACVETS), and the National Research and Evaluation Committee (NREC).

The National Research and Evaluation Committee was established to link more effectively vocational education and training research to the strategic policy directions of the sector. It comprises governments, business and research interests and will oversee the direction of nationally-funded vocational education and training research in Australia to the year 2000.

The Committee has developed a national research and evaluation strategy for vocational education and training. Under the Strategy six key priority areas have been identified:

- economic and social implications of vocational education and training
- employment and the work force
- pathways from school to work
- outcomes of the vocational education and training sector
- quality of the provision of vocational education and training
- future issues affecting the vocational education and training sector.

A central part of the new research and evaluation strategy will be to ensure the findings of vocational education and training research assist stake holders in the vocational education and training system make better decisions to improve the quality and effectiveness of training in Australia.

The establishment of AVETRA is timely and appropriate. It will assist in the development of a co-ordinated, collaborative and responsive network of researchers and other stakeholders. Independent researchers, as well as those undertaking specific projects for government, should benefit from this enhanced networking.

I mentioned earlier the six key priorities that have been identified under the national research and evaluation strategy. I would like to turn to why these are important to achieving the Government's priorities for the vocational education and training sector.

In relation to the economic and social implications of vocational education and training, the right level and mix of public and private investment in the sector are key issues and are critical to improving Australia's global competitiveness. More research is needed to quantify the benefits gained from vocational education and training - so that better strategies can be developed to promote the benefits among employers, employees, young people and the community and to guide investment decisions by governments.

Another key priority for the Government is ensuring that the national vocational education and training system is meeting the needs of business. Employers and business want to know more about how training can help improve their performance. We also need to ask how successfully training market reforms such as User Choice are achieving the aims of efficiency, effectiveness and responsiveness.

The Federal Government is committed to the provision of greater opportunities for young people to access vocational education and training and assist their transition to the workforce - and of course this is one of the major aims of New Apprenticeships. Some key issues that will require investigation and analysis are:

- the patterns of participation by young Australians in education, training and work and the implications for developing better pathways to facilitate the effective transition into the workforce;
- factors that increase the opportunities made available to young people by employers;
- the effectiveness of New Apprenticeships in meeting the needs of different groups of young Australians such as early school leavers.

Another key policy priority for the Government in the vocational education and training market is to maximise the efficient use of public resources. Achieving efficiency and maximising the use of resources can only be achieved if reliable information is available on the costs associated with the provision of training. We also need a thorough evaluation of the public and private returns to vocational education and training.

The quality of the vocational education and training system, not just the quantity, is particularly important, if we are to improve the competitiveness of Australian enterprises and the ongoing employability of individuals. We need to examine and evaluate best practice and benchmarks in relation to different teaching and learning approaches.

We need to develop a vision for vocational education and training into the twenty first century. This will involve research into the training needs arising from new and emerging industries and technologies.

Vocational education has a crucial role in the Government's vision to develop Australia as a society able to adapt flexibly and dynamically to the challenges of a highly competitive global economy. Underlying that vision is a recognition that vocational education and training research needs to be more useful in setting future policy directions.

AVETRA represents a vocational education and training research community which is well placed to contribute and support the development of future vocational education and training policy. I wish the Association and its individual members well in their endeavours and have much pleasure in declaring open what promises to be a most interesting conference.

Presidential address

Leo Maglen
University of Melbourne

I know this sounds somewhat hackneyed, but it is indeed an honour and a great privilege to welcome you all to the inaugural AVETRA national conference.

To have so many people here at a conference of researchers in vocational education and training, with such a program of papers, representing such a wide range of research activities in this field is, I think, an achievement we can all be proud of. We have made a very promising start. This conference and the ones we plan to hold regularly in the future are the focal point of this Association, and the showcase for VET research by our members. What we will be exhibiting here over the next few days point clearly to the vitality of VET research in this country, and to the potential we have as researchers to make a significant contribution to well-informed and effective VET policy and practice.

The whole idea of a national research association in VET is only about fifteen months old - but here we are, at our very own research conference, with such marvellous support. And this is before we have even had our first annual general meeting to formalise everything!

Let me give you a few statistics. (I know there are some in this audience who would be disappointed if I didn't throw in a few numbers.)

As of this moment AVETRA has a paid up membership of 225 – well in excess of our original expectations. Of those, 147 are delegates to this conference. We have a veritable smorgasbord of 53 papers and presentations from which to choose – and a cast of 73 presenters.

I don't know what else is on in this town over the next few days – but this is surely where a lot of the action is. We may not have the profile of the gathering in Canberra over the last two weeks, but I think what we will be doing over the next two days is every bit as important for the future of this country. I will let you reflect on this modest claim.

To have reached this point has required a lot of organisation and very hard work on the part of quite a few people - from right around Australia - all, of course, on a voluntary (well, unpaid) basis. It is appropriate that we acknowledge their efforts.

At the top of the list of those to whom we are indebted must be Karen Whittingham, our interim honorary secretary/treasurer. Karen has done an absolutely splendid job, both in getting the association off the ground, and in getting the conference organised. Without her neither would have happened – I thank her most sincerely. Chris Robinson joined Karen and me to form the interim management team, and his input was invaluable. I thank him also. Through Chris the people at NCVER have also been of great assistance. So, too, have the other founding members of the executive committee – Dr Mary Barrett, Dr Stephen Billett, Ms Berwyn Clayton, Dr Margaret Crowley, Ms Lenore Dembski, Dr Ian Falk, Dr Roger Harrris, Ms Megan Lilley, Professor Rod McDonald, Mr John McIntyre, Ms Maryanne Peterson, Associate Professor Terry Seddon, Ms Robyn Sefton, Ms Jozefa Sobski, Ms Patricia Stewart, Ms Lucy Stockdale, Mr Graham Weaver. To all of you, my thanks for your support. I am particularly grateful to those who formed the conference executive committee. A special thanks must also go to Rod McDonald here at UTS, and to his colleagues Mez Egg and John McIntyre. Karen and Mez have been in daily contact over the last few weeks. Without Rod, Meg, John and the others at UTS we wouldn't be here today.

So, once again, thank you very much, all of you.

The other important role I have to perform this morning, and one which also gives me pleasure, is to welcome Senator Chris Ellison, the Minister for Schools and Vocational Education and Training, and to invite him to officially open this conference.

I will come to that shortly – but before I do I want to flag what I think are some of the important issues that we as a research association should be contemplating – not just at this conference –but back at our posts, in our various capacities in the VET research community.

In doing so, I will be brief – but we must recognise that these issues are important. They are inter-related and surrounded by complexity. They need our careful and continued consideration.

The first issue is that of independence. AVETRA is an independent research association - independent of other research bodies in education and other related areas.

However, it should also be an association of independent researchers, who are free to conduct their research without undue influence from their employers, whether they be in the public or private sector, in higher education or the TAFE sector, in industry or wherever; from research funding bodies or from government policy makers.

Of course, we all need to work within the terms of our employment, to submit to the requirements of funding bodies and to respond to requests of policy makers. However, at all times we need to act with professionalism and integrity, to pursue our research rigorously, objectively and ethically, and to subject VET policy and practice to critical reasoned analysis.

This is a principle that few have difficulty subscribing to in theory. Unfortunately in practice researchers can sometimes have a difficult time resisting the pressures that can be exerted on them, by employers, funding bodies and governments to toe the line, to not be critical, to come up with palatable results. These pressures are not always explicit, but they can be no less effective for that.

The second issue is what it means to be a national research association. In an obvious sense it means we draw our membership from across the whole country. In another it means we are a single association, not a federated one. We have chosen not to come together as representatives of separate state associations, nor as representatives of other constituencies in the VET research community - such as the universities, the TAFE institutes, NCVER or whatever – but as individual members of a single national organisation. Regional and sectoral divisions have played no part in the establishment of this association, and should not be an issue in its operations.

Being an Australian research association points up our role as a point of contact with similar bodies of researchers overseas. It means that the activities of AVETRA – its conference, its journal and other forums it may organise, and the networks it builds up - should be made accessible to researchers from other countries. It means also that part of the role of the Association Executive is to make the contacts, build the links and establish liaisons with our international colleagues.

Many of the research questions we are seeking answers to are, of necessity, national, local or even single establishment in focus – but many have a much more universal/global significance. We therefore need to guard against being too parochial in our concerns, and always to be mindful of the wider issues, the broader contribution we can make to VET research worldwide.

The third issue concerns what is and what is not VET research. I think we can be quite relaxed about that. There are no hard and fast boundaries delineating the field, and my own inclination is that what constitutes VET research should be fairly broad and reasonably open. Suffice to say it should not be confined to research into the VET sector as we know it, nor should it embrace all the research that is undertaken by people working in that sector. As to the latter, there is clearly research going on in TAFE institutes, for example, that is not related to VET issues, and hence does not really come within the ambit of AVETRA. As to the former, I have, elsewhere, ventured a definition of VET that is sufficiently broad and all embracing to make most of us feel sufficiently comfortable about having a place within it, and which should generate enough research questions to keep all of us busy for as long as we have the strength to do so. I do not, however, expect everyone will agree wholeheartedly even with this broad canvas.

Here it is again:

> VET can be taken to encompass all educational and instructional experiences – be they formal or informal, pre-employment or employment-related, off-the-job or on-the-job – that are designed to directly enhance the skills, knowledge, competencies and capabilities of individuals, required in undertaking gainful employment, and irrespective of whether these experiences are designed and provided by schools, TAFE or higher education institutions, by private training providers or by employers in industry and commerce.

A related issue concerns the multi- or inter-disciplinary nature of VET research. VET research has to be a broad church if it is to successfully tackle all of the research issues that hide in the thickets of the definition of VET that I have just offered. It cannot be the preserve, nor even the principal territory, of any one discipline, research paradigm, methodology or however else we like to characterise the way in which we conduct our research and select the topics of our inquiry. All should have a place in VET research, the only qualification being that the research being conducted should be as rigorous, objective and as ethical as we can possibly make it. VET research may one day lay claim to its own unique flavour, until then it will survive and prosper by all of us recognising and benefiting from the diversity of approaches we bring to the task.

An issue that clearly arises out of consideration of the previous two is that of research priorities.

There is no shortage of lists of research topics and priorities in VET that we should be directing our attention to. ANTARAC had one, so does ANTA and several of the state training authorities. And of course NCVER/NREC has produced one as well. They are all worthwhile and serve a very useful purpose in helping to define what VET research is all about. And, what's more, in the main they sit quite comfortably with the definition of VET I have put forward.

However, I should inject a note of caution. These are the priorities as identified by policy makers and the funding bodies – albeit often with the aid of widespread consultations with members of the VET community. Nevertheless, as an independent association of independent researchers, we too have an obligation to help shape the research agenda – to let it be known what we consider are the important research questions that need investigation.

Having offered a definition of VET, I am now going to chance my arm even further and give you what I think are the two most fundamental questions VET researchers have to tackle. It is from these, it seems to me, that all other research questions sprout – as limbs and branches. They are:

- What are the skills, knowledge, competencies and capabilities needed for people to obtain employment and to remain in it?
- What are the most cost-effective means of ensuring individuals acquire them?

It is my contention that we as a research community will be judged most on our ability to provide answers to those two core questions.

The next issue is the vexed one of research funding and intellectual property rights. I don't want to go into this in any detail here, but it will come up at other times during the conference. It is vital, for us to grow as a vigorous credible research community, that VET researchers have the same property rights over their research as do researchers in other fields, and that funding bodies respect that.

The issue is particularly relevant to openly competitive funding for researcher initiated research of the ARC variety. VET research will benefit both from having as much of this type of funding as possible, and from having the researchers being able to retain the right to publish their findings in ways that they see fit. This too, is at the heart of being independent researchers. It does, however, call for trust on both sides.

This leads us on to the next issue, and that is dissemination of research findings. It is, of course, well recognised in VET research, that dissemination is a crucial aspect of our work – and careful thought should be given to ways of getting our research findings known by those who can most benefit from them. There are, of course, two dimensions to research disseminations – breadth and depth.

Wide dissemination of research findings is important, but so too is its impact. Strategies that maximise the first may not be those that will maximise the second. Again, allowing the individual researchers to participate in the dissemination process in ways they think appropriate, can only help achieve greater effectiveness in both dimensions.

The final issue I want to put on the table this morning is that of our growth strategy.

We have started well. However, for us to establish ourselves not only as a viable successful sustainable research association, but also for VET to consolidate itself as a separate and identifiable and comprehensive research field, the body of research we produce and disseminate must continue to grow in quantity and quality.

Some of the things that will help ensure this are:

- we must all, as researchers, strive to improve the quality of our research;
- we must actively encourage, support and train-up talented young researchers - through Masters and PhD programs in VET - through mentoring/research workshops etc.;
- the attraction into VET research of able, experienced, outstanding researchers in the disciplines relevant to VET research;
- the funding bodies should be more transparent in their selection criteria, and they should provide constructive feedback to both successful and unsuccessful research grant applications;
- a fair and comparable distribution of intellectual property rights is vital.

If we achieve all these things then the future of our Association will be assured, and we can look forward to many more conferences that will be even more successful than this one is going to be.

I am very conscious of the Minister patiently listening to what I have to say – I hope he gets all the positive messages I have tried to convey. VET research is here to serve the best interests of the VET community in this country and elsewhere.

I now welcome the Minister, and invite him to open the conference for us.

An overview of Australian vocational education and training research

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In this paper an overview of vocational education and training (VET) research in a number of selected areas is provided. The research examined is the wide range of VET research reports and papers that have been published in Australia, mainly in the 1990s, on the topics of -

- learning in the workplace
- returns to enterprises from investment in VET
- VET and small business
- training markets
- entry-level training
- vocational education in schools
- public and private training provision
- flexible delivery of training
- assessor training programs
- quality assurance in VET
- evaluation of VET.

The main studies referred to in this paper were prepared as part of a series of 'research stocktakes' that were undertaken in 1997 to inform the development of priorities for Australia's new national VET research and evaluation strategy. The *National Research and Evaluation Strategy for Vocational Education and Training in Australia, 1997-2000* was published by the National Centre for Vocational Education Research (NCVER) in 1997 (see NCVER 1997). The new national VET research and evaluation strategy was prepared by the NCVER under the guidance of the National Research and Evaluation Committee (NREC). The key elements of this strategy are outlined in Robinson (1997).

Learning in the workplace

Australian vocational education and training policies in recent years have been about shifting the emphasis from what courses TAFE and other training providers are able to offer (ie. the supply side of the equation) to a focus on what industry and enterprises really required in terms of skill formation (the demand side). There has been a corresponding shift in training out of the classroom and into the workplace. But how much do we really know about the effectiveness of workplace learning?

Hager (1997a) reviewed the recent Australian research literature on the issue of 'learning in the workplace' which includes both formal on-the-job training and informal workplace learning. Both are important, with some research stressing the importance of productive interactions between the two. Hager noted that recent policy decisions have led to increasing emphasis being placed on the informal activities and that this presents problems because informal workplace learning is different from formal on-the-job learning.

Hager noted that informal workplace learning is characterised by such things as its close relationship to the environment of the individual learner's workplace, its unstructured nature and the absence of any formal training program. Characteristics such as these have allowed some people to undervalue informal learning because it is 'enterprise specific' and not related to the national or industry standards.

However, the close relationship between informal learning and an individual learner's workplace can be seen as a good thing. Many businesses work hard at promoting a 'company philosophy' or 'corporate culture' which underpins the way they work and their relationships with the wider community. Therefore, there are expectations about the performance of employees that stem from these company workplace requirements. The learning of a workplace culture is more frequently done informally than formally; it tends to be 'absorbed' by the employees over time as a result of constant exposure.

Recent research on learning in the workplace has demonstrated that:

- simple notions of transfer of skills learnt in the workplace are dubious
- the best kinds of learning in the workplace involve appropriate links between formal training and informal workplace learning
- proper account needs to be taken of the diversity of variables in the workplace environment/culture, language, numeracy and literacy are capable of being addressed in a holistic way along with other changes as workplace reform is implemented
- there is much confusion about the 'recognition of prior learning' (RPL) even though it enjoys wide support

Nevertheless, there is still much more we need to know and, in particular, the area of informal learning deserves greater attention. We need to better understand how to apply RPL procedures to informal learning and just how informal learning links with formal learning activities. As well as RPL procedures, the conventional methods of workplace assessment are not well developed. These and the associated record-keeping activities require further investigation and development. There is also an issue about costs. If we move more of our training out of the classroom and into the workplace, we need to know that this produces better outcomes and that these outcomes are worth the extra expenditure that may be involved.

Returns to enterprises from investment in vocational education and training

Knowing more about the benefits and costs to enterprises of training is critical in the context of increasing the skill formation efforts of Australian enterprises and the overall levels of skills in the Australian economy. Many Australian businesses remain sceptical about the value of investing in training and learning, seeing training as a cost rather than an investment. Some enterprises adopt policies of recruiting skilled employees already trained by other enterprises rather than investing in skill formation themselves.

Billett and Cooper (1997) analysed recent Australian research which addresses this topic. They found that Australian research over the 1990s into this question suggests that patterns of enterprise investment in training have varied considerably, particularly in relation to factors such as enterprise size, the degree of specialisation in the training required, geographic location and perceptions of the value of training.

They found that the research suggests that most larger enterprises invest in training whereas many small to medium-sized business do not. Enterprises make different levels of contribution to training, depending on the degree of specialisation of the training required and the extent to which publicly funded VET is able to provide the training they require. Convenience, in terms of ease of physical access to publicly funded VET in the locality of the enterprise, is a factor determining its own investment in training. Many enterprises, particularly small ones, do not believe the returns to investment in training match the costs and have displayed little interest to date in securing more detailed information about the returns on training expenditure.

Billett and Cooper concluded that future policies will involve investigating strategies to increase business investment in training. In particular, they concluded that the questions emerging from the analysis of the literature on returns to enterprises from their investment in training include:

- How best can we overcome barriers which inhibit investment in training by small business?

- If low levels of investment in training by small business continue, what approaches need to be implemented to maintain and increase the nation's quantum of training activity?

Vocational education and training in small business

The empirical evidence about small business involvement in training is clear cut. Fewer than 20 per cent of small businesses report training expenditure, whereas most large enterprises (those with more than 100 employees) are spending considerable amounts on training. The evidence is also that small business training activity in Australia is on the decline, and it has been gradually declining over a long period of time. It is a vital issue because over half of employed Australians work in small businesses. Knowing more about the factors explaining these training patterns will be critical in devising future strategies to address the paucity of training amongst Australia's small businesses (those employing fewer than 20 people).

It should be noted in any discussion of reported training expenditure in small business that this refers to formal training which is structured and therefore does not include the informal training that occurs in small business. Researchers such as Field (1997) have noted that while the amount of structured formal training taking place in small business is low, there is little published data on the amount of learning that takes place in small business.

Gibb (1997) looked at Field (1997) and the very considerable body of other recent Australian research on VET in small businesses in her review of Australian research literature in the 1990s, in an attempt to throw light on what the key factors behind this situation are.

Firstly, she examined a number of major reports commissioned in the early part of the 1990s mainly in the area of management education and training. These focussed on the role for government in addressing training in small business.

The strong message that came through these reports is that the training system was failing to meet the needs of small business and the system needed to pay more attention to marketing its products. In addition, Gibb found that there were numerous disincentives or barriers to training faced by small business: cost, location, scheduling, quality and relevance of training and the fact that small business tended to employ people with the skills they needed. By the mid 1990s, there was increasing recognition of the fact that training for small business was generally informal, conducted on site by experienced workers and included advice provided by accountants and bank managers.

Gibb went on to examine research on the issue of creating partnership arrangements between small business clients and training providers and the fact that training providers must make their product relevant to small business and its goals. The main focus of research in this area has been identifying barriers to business being involved in training, identifying the training needs of managers and employees and reporting on case study research of small businesses and the approach to training being taken. The main approach to training in small business would appear to be informal, which is not a component of training reform.

In examining research on the question of training delivery to small business, Gibb found that much of the research restates the need for training providers to change how they operate. While many writers have described the needs of small business, there is little research reporting on innovative methods that have delivered what small business wants. A recent development has been research on workplace-based training. However, Gibb argued that this research appears inconclusive because it seems that formal workplace training does not sit comfortably with small business. The success of workplace-based delivery can depend on the commitment of players, the ongoing support and the characteristics of the learning environment at work, about which little is known.

In looking at training formation and networks for small business, Gibb found that the research in this area makes reference to the role that business advisors such as accountants and bank officers play in providing information and advice to small business. Research has also led to pilot projects which establish mentors or networks for certain target groups and report on the success of these approaches. Although much of the research into small business refers to the need to promote a training culture, it is unclear which bodies are responsible for this and what are effective means of providing information about the training system. Little research has been undertaken on the extent to which small business uses networks, which networks are used and what value they provide.

Gibb also examined Australian research into the quality of training provision to small business and into equity issues affecting access to small business training. In both areas she found very little available research.

Finally, Gibb examined Australian research in the quality of training provision to small business and into equity issues affecting access to small business training. While there has been some research commissioned into small business and the VET needs of women, people of non-English-speaking background and the rural community, there appears to be no available research into small business and VET needs of indigenous peoples and people with a disability.

Training markets

Anderson (1997) reviewed the very considerable volume of recent literature on the issue of training markets in Australia. As Anderson argued, training markets are now a critically important issue in the Australian VET scene because, since the mid-1980s, Commonwealth, State and Territory governments have been engaged in a process of reform with the aim of increasing the efficiency, flexibility, quality and responsiveness of the VET sector in Australia. Among the most important of recent policy developments is the introduction of competition and market reforms. The concept of a training market is now a central feature of government reports and policy literature on VET. The training market has become the dominant model for reframing the relationship between skills supply and demand, and for re-engineering the structure, culture and operations of the VET sector. Within the market framework, competition has been adopted as the key principle for reorganising the financing and delivery of VET programs and services.

Anderson argued that recent attempts to promote the development of a competitive training market are unprecedented in the history of the Australian VET sector. They represent a radical shift from traditional approaches to the provision of VET programs and services which, up to the late 1980s, occurred largely under non-market conditions. The policies and practices associated with the development of a competitive training market have far-reaching implications for participants in the VET sector. They challenge long-standing assumptions about the nature and purposes of VET, and necessitate a thoroughgoing review of the roles, responsibilities and relationships of all stakeholders. As a consequence, the development of a competitive training market has sparked considerable debate in the VET sector.

In his examination of current knowledge about the nature, development and consequences of competition and market reform in the Australian VET sector, Anderson examined key aspects of the theory and practice of a competitive training market and research on the dimensions of the training market. He also considered the available literature on central policy issues such as models of competition and market reform; the role of government; and approaches to the funding and regulation of VET. Research on the impact and consequences of competition and market reform are also reviewed.

Anderson found that although there is a growing body of research on competition and market reform in the VET sector, the knowledge and information bases remain limited in key respects. Conceptual frameworks and data for analysing the size, structure and composition of the training market require further development. He argued that additional research is required on the extent to which current market conditions satisfy the pre-conditions for an effective training market, specifically in relation to:

- the structure and composition of the supply and demand sides of the market
- the nature of VET products
- the information requirements of clients and providers.

Most importantly, he also points to the need for more research on the efficiency and cost-effectiveness of the various models for competition and market reform, and their relative appropriateness for different market sectors. Anderson also stressed that there is a need to develop a better understanding of the costs and benefits of competition and market reforms.

The real message from this review of research literature, in my view, is that there has been a lot of commentary on the issue of training markets, very often motivated by the particular philosophical stance of the authors (or, more correctly, the commentators). What is missing is a body of dispassionate and analytical research into the actual effects of training markets in Australia.

Entry-level training

Issues associated with apprenticeships and traineeships have been given a heightened emphasis recently, with the Federal Government's policy focus on young people and New Apprenticeships.

Moreover, any policy debate on entry-level training in Australia in recent years has really been overshadowed by media focus on the decline in apprenticeship numbers in Australia since the historically high apprenticeship numbers right at the beginning of the 1990s. What is not widely understood is that the decline in apprenticeship numbers, which has largely been halted in the past couple of years, really reflects a shift in employment from traditional manufacturing industries (where apprenticeship training has predominated) towards emerging industries (such as tourism and other service industries) or industries where employment is consolidating (such as retailing). It is these industries where traineeships predominate over apprenticeships (see Ball & Robinson 1997). In the last few years, overall entry-level training numbers have been growing very strongly because of the large increases in the number of traineeships.

Examining the research literature into entry-level training is the subject of the research review undertaken by Lundberg (1997). He found that 'specifying major policy-relevant research findings on entry-level training is rather like identifying beauty'. He pointed out that there are many worthwhile research projects, but the essential reality is that the major policy directions have been determined by assumed policy premises with strong roots in prevailing political or other ideologies, but with little basis in research. According to Lundberg, researchers have tested the arrangements, warned of difficulties and suggested improvements and even queried fundamental premises, but changes of direction have been largely politically determined.

Lundberg concluded that the contribution research has made to informing policy on entry-level vocational education and training could (and probably should) have been greater. He argued, however, that research has informed several areas, including knowledge in relation to:

- competence requiring knowledge and understanding as well as performance
- competency-based assessment, including graded assessment
- problems of policy implementation
- unforeseen consequences or limitations of official policies

Lundberg identified a number of areas for future research into entry-level training that, along with improvements to statistical data, he believes are necessary to improve the quantum of strategic and policy relevant research in this area. These include:

- reasons for the decline in apparent retention to Year 12 since 1993
- reasons for the decline in provision of apprenticeship opportunities, and in the educational profile of students taking those that are available, in comparison with the growth in traineeships
- the relationship between employer and trainee participation in work-based training arrangements and incentives, including training wages and subsidies
- the learning processes associated with achieving competence
- graded standards-based assessment
- factors affecting transfer of knowledge and skill

Vocational education in schools

Perhaps the most 'fashionable' contemporary issue in VET in Australia today is the issue of VET in schools. The massive increase in secondary school retention to Year 12 in Australia over the past couple of decades (although retention rates have declined marginally in very recent years), together with the realisation that the majority of Year 12 students will not enter higher education, has meant a resurgence of interest amongst Australian educators in vocational education in the senior secondary years. It is almost as if the 'purging' of vocational education from secondary school curricula that occurred in many parts of Australia throughout the 1970s and 1980s did not happen.

Ryan (1997) argued, in his examination of Australian research literature on this subject, that, during the 1980s and 1990s, sustained increases in youth unemployment and a general perception that the transition from education to employment and adult roles has become more hazardous for young people, have caused a range of the Organisation for Economic Co-operation and Development (OECD) countries to redefine education policy with a sharper vocational focus.

Ryan noted the challenge that the introduction of vocational education presents to a school system which has hitherto largely confined itself to delivering general academic subjects to students seeking the traditional higher school or tertiary entrance certificates at the end of their twelfth year. He found that, so far, the integration of vocational education with general education was poor, as was integration with institutions-based and workplace training initiatives. This was despite the success of the short-term work placement and work experience programs for school students being promoted by organisations like the Australian Student Traineeship Foundation (ASTF). Not only were these programs highly valued by the students taking part, but also participation in the programs generally enhanced the skills sought in general education. Ryan also drew attention to the evidence of successful local institutions' initiatives with VET in School programs and argues that ways must be found to legitimise and resource these at the national level.

Other challenges are even more complex because they require changes to the school culture and its underpinning values. Traditional school teaching cultures do not sit comfortably with vocational education and a substantial (and potentially costly) program of professional development for school teachers will be needed as the amount of *VET in schools* increases. Furthermore, ways must be found for dealing with the perceptions that some students and many parents have of vocational education as being 'second best' and inferior.

Enough is known about the difficulty of changing values and attitudes to realise that advancing the cause vocational education in schools is going to require substantial commitment from all these involved over the next few years.

Public and private training provision

There is a degree of overlap between the issues identified by Barnett (1997) in her review of research literature about public and private training provision and those covered in the review of research on training markets by Anderson (1997). Barnett (1997) showed that the recent national policy initiatives related to 'the market' have promoted competitive delivery of VET by seeking to remove the impediments faced by non-TAFE providers and encouraging public providers to operate in a more entrepreneurial fashion. By endorsing an open training market a more significant role for private providers is automatically encouraged.

However, this change in policy direction was initiated with a dearth of research and statistical evidence about the nature and operation of private provision and about the implications of altering the public-private balance by market-driven provision. It is only in the past five years or so—throughout the period of the implementation of these initiatives—that this knowledge gap has begun to be addressed. However, even so, it is apparent from Barnett's review that more research will be needed in order to obtain a comprehensive and coherent view of the factors which influence the training market and, within this, of the most appropriate strategies to foster a dynamic balance between public and private provision of VET.

Although VET providers are often described in terms of their sectoral base—private or public—this segmentation is not a clear one. It disguises the fact that providers in either sector do not necessarily operate exclusively within one sector. Furthermore, it suggests a degree of homogeneity which does not in fact exist, particularly among the 'private' providers. Public and private provision of training cannot be readily identified in terms of separate sectors, or even in terms of individual providers.

A critical problem for researchers has been the absence of comprehensive data collection about the size and operation of the private and public training sectors. This has made it difficult to determine the composition and relative size of the private sector and, in particular, of the unregistered private sector. Neither the Australian Bureau of Statistics (ABS) nor individual government agencies had, until recently, kept data on private training provision on a regular or comprehensive basis.

In terms of market share, TAFE is the dominant provider of training, even though private providers have increased their share through competitive tendering (when this option is available to them). Providers in the private VET sector have been found to operate within 'niche' markets, thus enabling them to compete with TAFE in a less direct way. Niche markets usually arise from gaps in public sector provision as a result of under-supply or non-provision.

Barnett also reviewed the extent to which the key components of training reform such as:

- competency-based training
- accreditation of courses and registration of providers
- quality assurance
- recognition of prior learning
- access and equity
- have impacted on the training providers.

Recent research has identified a range of market distortions or barriers to entry which have not facilitated competitive neutrality or a 'level-playing field' in VET provision. These include:

- lack of access in some States to curriculum developed with public funds or, conversely, to curriculum developed privately
- slow and bureaucratic accreditation and registration procedures
- a tendency for accreditation authorities to use TAFE curriculum as a benchmark thus limiting product diversity
- poor articulation to higher education courses
- many courses offered by competitive tender have short-term (one year) funding which disadvantages private providers who are usually reliant on continuity of income to a greater extent than are TAFE providers
- an open training market does not favour all private providers because geographical, political and organisational factors influence their ability to deliver services competitively

Collection of crucial information relating to competitive neutrality has recently commenced, but this critical and, so far, little documented area requires ongoing monitoring as well as the development of a comprehensive and coherent research strategy in order to adequately inform future VET policy.

Flexible delivery of training

Some quite different VET issues get pulled together under the 'flexible delivery of training' (or more importantly, of *learning*) banner. Some, quite inappropriately, relate to finding yet another application for the latest developments in information technology. Others represent genuine attempts to improve learning outcomes in different situations by using diverse and flexible approaches to the delivery of training (which may happen to encompass the effective educational use of new technologies).

Kearns (1997) reviewed recent Australian research on *flexible delivery* in training. He drew attention to the different interpretations being placed on the term flexible delivery and noted that the changing nature of the concept has been driven by the recent policy shifts in VET promoting economic/ efficiency objectives. He pointed out that research has been impeded by a lack of clarity in the concepts used throughout this period with terms such as flexible delivery, open learning, and flexible learning used interchangeably. He went on to say that research has revealed confusions among teachers and trainers who are unsure whether flexible delivery methods are being adopted for their educational or their economic value. Kearns' review suggests that flexible delivery methods encounter more problems in a training college environment than in industry. Apart from the question about what is driving the change at the college level, staff can be frustrated by such things as inappropriate resources and industrial relations issues relating to teaching awards and work practices.

Not surprisingly, the greatest value of flexible delivery strategies are found in their use with disadvantaged groups. Kearns noted successful examples of the strategies with non-English-speaking background students and Aboriginal people. Other work with students who have intellectual or neurological disabilities is also promising. Teachers are, in general, poorly prepared to deal with students with physical disabilities in their classes—flexible delivery methods can be of considerable value to these students. However, the review also emphasises that many teachers and trainers are poorly prepared to implement flexible delivery strategies. For many, flexible delivery represents a different teaching and learning culture both in training colleges and industry. Effective staff development programs are needed to prepare teachers and trainers for the task of implementing the new strategies.

Some specific gaps in the relevant research literature identified by Kearns include the following:

- There has been a relative neglect of learning aspects of flexible delivery including the application of adult learning principles, and of the analysis of the learning benefits and outcomes of alternative delivery strategies.
- There is a major deficiency in the research base related to the economic and social imperatives for lifelong learning.
- There have been few longitudinal studies to monitor outcomes of the strategies which address the barriers to flexible delivery identified in the research.

There is insufficient ongoing statistical monitoring of different delivery modes and their implications for training outcomes. One ominous finding in the paper was the suggestion that *learning outcomes* were not the chief determinants for deciding whether or not to use a flexible delivery technology. The future is bleak for any new technology adopted for reasons other than it is an effective method by which students can learn.

Assessor training programs

Competency-based assessment has been a prescribed feature of VET in Australia for around ten years. Given this fact, it is therefore worrying to learn how little information we have about the training received by people responsible for conducting competency-based assessments.

Docking (1997), in his review of research into assessor training programs, noted that although assessor training courses have proliferated in recent times, there has been little effort to monitor their scope and quality. He pointed out there is little hard evidence to show that assessor training has made any improvement to assessment procedures and calls for research which compares the efficacy of the judgements made by people who have successfully completed different assessor training courses. Docking also drew attention to the impact that the process of being assessed has on the individual learner. Research is lacking in this area as the relationships between competency-based assessment and an individual's learning style, self-concept, and motivation are poorly understood. Employers would no doubt embrace competency-based assessments more enthusiastically and be more prepared for their supervisors to be trained as assessors if there was evidence that the end result was a more motivated and highly skilled workforce. The costs of training supervisors to become assessors and conducting competency-based assessments in their workplaces are a new and often unwelcome burden for many employers. This situation will not change for these employers until it is possible to demonstrate that the expenditure is matched by increased productivity.

On a more positive note, the review shows that there has been a substantial amount of work specifying what is appropriate content for the assessor training programs. This has, in part, been driven by a decision of the ANTA Ministerial Council which specified that all assessors should be competent against endorsed competency standards. The assessor competency standards have been developed by the Competency Standards Body—Assessors and Workplace Trainers. The standards date back to the early 1990s and underwent a major revision in 1995. These standards are the basis for the many assessor training courses currently available. The assessors and workplace trainers body has recently produced a set of guidelines to assist the providers of these courses. This has presumably been done to address some of the uncertainties and information gaps detailed in Docking's review. However, the fundamental question as to whether assessor training programs are producing competent assessors still remains unanswered.

- Docking's review of assessor training program research has a number of implications for policy-makers and practitioners. These include:
- sponsoring further research to extend our understanding of competency-based assessment, how this approach can be taught to assessors and how the impact of assessment can be evaluated.
- incorporating interpersonal skills (communication skills, cultural awareness and gender awareness) in assessor standards
- tightening up on accreditation procedures to ensure that all the assessor competencies are covered, that assessor trainers are qualified and experienced, and that the assessment process is rigorous and includes on-the-job components
- providing for ongoing auditing of assessor training courses to ensure that they conform to their accreditation conditions
- ensuring that all assessors (including TAFE lecturers) are qualified assessors

establishing a national register of assessors (or comprehensive industry-based registers)

Quality assurance in VET

Every so often a particular technique or procedure is promoted as the panacea for some perceived ill of vocational education and training in Australia. In recent times, *quality assurance* has been one such panacea. Hager (1997b), in his review of research about quality assurance in VET, traces the interest in quality assurance in the VET sector to :

- close connections with industry sectors that have gained from the introduction of quality assurance measures
- the more competitive training market that has been increasingly encouraged by governments in Australia
- increasing demand for quality by those paying for courses which are becoming increasingly more expensive

This interest has been further reinforced by the Australian National Training Authority's emphasis on developing system-wide performance measures for the VET sector. Hager reviewed a range of quality programs and identifies those most relevant to vocational education and training, namely: quality assurance (the ISO 9001 standards), best practice and benchmarking, and self-managed teams. Perhaps, more importantly, he identified programs that are of doubtful relevance to the sector and also a need for more sector-specific information on quality approaches to help guide future initiatives.

Research into quality programs in the VET sector consists, for the most part, of case studies directed at the development of quality assurance procedures rather than an evaluation of how well these procedures are working. Evaluative studies of quality initiatives that have become well established are therefore seen to be an important research priority in the short term.

Furthermore, nearly all the research reviewed has been done in the publicly funded sector of VET, hence there is also a priority for more work to be done in the private sector.

At this point in time, the difficulty in drawing definite conclusions from the VET sector research into quality is due to a combination of three factors:

- the diversity of approaches to quality in the sector
- the diversity of targets to which the quality measures have been applied
- the very preliminary stage of most of the projects

However, if we are prepared to see quality as a journey rather than a final destination, the diverse nature of the work and the fact that much is at a preliminary stage should not be a problem. Processes and procedures related to the work of organisations are never static and we must recognise that the quality journey is evolutionary in nature.

It is clear that the development of quality approaches will continue unabated in the foreseeable future using criteria such as those based on the Standards Australia ISO series and the Australian Quality Awards. However, as the review indicates, there is a need to evaluate the range of approaches being adopted within the sector before any one approach can be recommended.

Nevertheless, whatever quality program is implemented, one thing we can be sure of is that its success will depend upon the attitude and commitment that everybody involved in the program has towards quality improvement.

The evaluation of vocational education and training

The adoption of program budgeting across most areas of government expenditure in Australia and other developed economies over the past couple of decades has included public spending on education and training. Formal evaluation strategies have been incorporated as part of these program budgeting processes.

McDonald and Hayton (1997) examined the extent to which evaluations of VET have been undertaken in Australia over the past five years. They also examined what evidence exists in the Australian VET context for gauging the extent to which evaluations have led to the improvement of VET.

Rather disturbingly, they conclude that evaluation has so far been little used for the improvement of VET in Australia. Their review of the literature found that over the past five years, there were only 98 published evaluations on vocational education, and four on workplace training. Moreover, in a recent survey of industry, only 48 per cent of worksites had formally evaluated any training delivered in the past year.

- McDonald and Hayton went on to say that evaluation, like research, has not been used to provide the support that it could to those framing VET policy because:
- VET policy has, in the past, tended to be formed at a rate that made evaluative input impossible.
- Only rarely do evaluations include analysis of cost-benefit issues.

Results of the evaluations are rarely made available in a form which will facilitate their use by those framing policy. Policy issues which are more difficult to resolve are often avoided in evaluation projects.

McDonald and Hayton concluded that evaluation has the potential to play an important role in vocational education and training. By its focus on formulation of the significant questions, data gathering, analysis, and subsequent action it can make decisions at all levels better considered, and can help to improve policy and practice. They argued that much more emphasis should be given in the future to building on the results of evaluations to improve VET in Australia.

Conclusion

The reviews of research referred to in this paper are by no means exhaustive. They are merely a cross-section, albeit a wide one, of the enormous range of topics covered by Australian VET researchers in recent years.

In recognition of this the NCVER will continue to commission further reviews of Australian VET research literature to inform decision making in the sector and provide researchers with useful reference tools. For example, some studies looking at research done into different aspects of equity in VET are currently underway.

The striking thing about the research reviews examined in this paper is, however, the sheer volume of VET research that has been carried out in Australia over the 1990s, particularly in the last two or three years. While not every study reviewed was an Australian one, most were, and while some of the studies were examined in more than one of the reviews of research, in total the eleven research reviews referred to in this paper looked at around 700 research papers and reports in their reviews of VET research literature in the 1990s.

Quantity of VET research is now not a major issue in Australia. The next challenge is the quality of research undertaken.

Note: This paper is based on an extract from Robinson, C and Thomson, P 1998, 'An overview of the research and evaluation effort in vocational education and training', in Robinson, C and Thomson, P (eds) 1998, 'Readings in Australian Vocational Education Research', NCVER, Adelaide, pp 1-24 (forthcoming)

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The impact of research on VET policy, practice and performance

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In April 1996, the Australian National Training Authority (ANTA) Research Advisory Council (ANTA RAC) advertised that it would fund a research project to 'review the evidence for and where possible evaluate the extent of influence of research in vocational education and training'. The Council said it was particularly interested in the impact of research in three areas: policy and planning; practice and performance; and community relations. The research consultancy was awarded to the Monash University - ACER Centre for the Economics of Education and Training (CEET), in association with the Research Centre for Vocational Education and Training (RCVET) at the University of Technology, Sydney. The authors of the full study were Chris Selby Smith (CEET: chief investigator), Geof Hawke and Rod McDonald (RCVET) and Joy Selby Smith (a private consultant).

The motivation for setting up the study was not indicated in the brief. However, there have been suggestions that there is a degree of scepticism on the part of some stakeholders about the value of research and whether the money allocated to research is well spent. The report *No Small Change* (McDonald et al, 1993) had also argued that research in vocational education and training (VET) was fragmented and that links between research and policy and practice were weak, with little fundamental and general-issues-based research in VET and no strong critique of VET policies and programs. That report proposed the development of a national R&D strategy for VET and identified the components to underpin it.

In 1996 the ANTA Board recognised the need for a more integrated research effort that would focus on providing advice to the wide range of VET stakeholders: the National Research and Evaluation Committee (NREC) was formed, as a sub-committee of the National Centre for Vocational Education Research (NCVER) Board, to ensure a more focussed approach to the national research and evaluation strategy. NCVER has now prepared for NREC *The national research and evaluation strategy for vocational education and training in Australia 1997-2000* (NCVER 1997). A key component of the strategy is assuring that the best use is made of research and evaluation outcomes.

The investigation: five complementary approaches

In the tender accepted by the funding body, the research team stated that 'we know from studies of the use and impact of research both within education and in similar areas that the relationship between research and its outcome is almost always complex and not easily discerned ... (and that) ... it is important to note that we do not expect to detect easily the impact of particular pieces of research'. It was proposed therefore that the research question should be examined from a number of different perspectives. Five complementary approaches would be employed:

- a review of relevant literature, noting that there is no single approach to the issue of the impact of research, either generally, or specifically in vocational education and training;
- a symposium, to identify key issues promptly and draw on different perspectives and approaches to the research question;
- quantitative studies to provide information on the scope and nature of the impact of research on VET;

- case studies, to explore the influence of the factors identified in the literature and in discussion at the symposium in the context of particular situations (the case studies provide a richness that cannot be obtained from quantitative responses alone); and
- a reference to overseas experience and perspectives with a paper setting out preliminary findings to be circulated to informed overseas commentators. Their responses would be incorporated in the final report.

The researchers also proposed, and the funding body accepted, that particular attention would be given to the impact of research on policy and planning, and practice and performance (referred to together as 'decision-making'). Less attention would be given to community relations aspects.

The findings to emerge from these approaches are included in the relevant chapters of the Impact Project report. This paper is a synthesis of the main findings. Of course, full understanding requires a reading of the complete report.

Not a simple question

The research question as specified would seem to imply an uncomplicated, linear relationship between research and decision-making. In fact, the relationship cannot be so simply described.

Research impact has been the subject of a number of studies in various areas of public policy. These studies have been carried out internationally and in Australia, including by members of the research team and symposium participants. This accumulating knowledge brings us to a more sophisticated starting point.

First, the idea of a one-to-one relationship between research and decision-making generally has been discredited. Rather, the perspectives that have been emphasised in the literature are that the larger impacts of research are more often indirect than direct; delayed rather than immediate; more minor individually but major in combination. Research involves the accumulation of knowledge, as discussion at the symposium emphasised. Research contributes to the 'climate of opinion' and the development of 'ideas in good currency'. Of course, these perspectives do not imply that individual studies necessarily have no impact.

Secondly, the relationships between research and decision-making can be considered from two viewpoints: from that of research and from that of decision-making. The research viewpoint tends to narrow the perspective of the investigator to the research process and research outcomes (the 'key hole' problem) and downplay the complexity of decision-making. From the decision-making viewpoint the role of research is more diffuse, but not necessarily less influential.

The literature identifies a number of roles for research but it is the information role that has attracted most study. It has been argued that research provides 'new and better' information, that it is more 'rational' information and that the quality and accuracy of knowledge based on research is better than that obtained from 'reactive data gathering'. On the other hand, writers have also noted the 'incomplete nature' of much research based information from the decision-makers' perspective: decision-makers can also draw on their own first-hand experience and many sources of direct information. The balanced view, it is argued, is to regard information derived from research as one of a number of sources of information available to decision-makers, and information from all sources as only one of a number of possible inputs into decision-making. 'On a good day, ideas [information] may gain a hearing amidst the swirl of political considerations but it must be a very good and rare day indeed when policy-makers take their cues mainly from scientific knowledge about the state of the world they hope to change or protect' (Brown, 1991).

Thirdly, the strength of the linkages between research (and researchers) and decision-making (and decision-makers) also influences research impact. Contact between the two groups, not only at the close of a study, but also before and especially during its conduct can have a strong influence on impact and can result in 'the establishment of multiple areas of collaboration between the two parties which transcend the impact of a single study' (Huberman, 1990). From a wider perspective, linkages between research and decision-making may also be facilitated through particular institutional arrangements including the media, key stakeholder organisations and other interest groups, and mechanisms such as funding arrangements, so that linkages might be conceptualised better as a 'web' or 'network' (Selby Smith et al, 1992).

These considerations led the research team to the view that to 'review the evidence for and where possible evaluate the extent of influence of research on vocational education and training' necessitates an understanding of the dynamics operating in each of the three areas: in decision-making, in research and in the web of linkages. To develop a response to the research question also requires that the meaning of the terms they employed, 'impact' and 'influence', be explored (Section 4). Only with this understanding is it possible to offer an answer to the research question (Section 5).

The influence of research

In the consultancy brief the funding body referred to the 'impact' of research on decision-making in the three areas of VET; their research question refers to 'influence'. At the symposium and in discussions with those undertaking the case studies it became clear that the ways in which research can have impact are more wide-ranging than direct effects on decision-making alone.

Thus, the case studies indicate that research can also have impact through raising awareness among VET stakeholders and in the wider community; and through enhancing the acceptance of the value of research approaches in VET institutions, thereby providing a better basis for policy and practice in the future. The case studies also indicate that decision-makers' involvement in the conduct of research projects can improve their understanding of particular issues. Research processes can also have an impact on the subjects of the research: Dwyer's case study shows that the involvement of young people in his research project contributed to a change in their attitudes towards VET and their readiness to recommend VET to others. (See Selby Smith et al, 1997; and Dwyer et al, 1997.)

In this project we took the term 'impact' and defined it to incorporate two elements: 'use' and 'influence'. 'Use' refers to whether the research has served a particular purpose. 'Influence' relates more closely to whether the research has had an effect on decision-making; that is, whether it has made a difference to the decision made. 'Use' can have several meanings depending upon the decision-making setting including: to solve a problem; to justify a prior decision; as a weapon in a political debate; and to improve conceptual understanding.

The adoption of these meanings for impact, use and influence has a number of implications. First, it is implied that research can be used but not have an influence, in the sense of not making a difference to what would otherwise have been decided. But the question then is: what is the counterfactual? It would be difficult to establish in many, perhaps in most, situations, especially after the decision has been made and some time has elapsed, and where other factors also affect outcomes. '[The research findings] were used in the decision-making process as though it did have an impact ... but, of course, it was going with the flow'.

Secondly, research can influence decisions *not* to act as well as decisions to act. To resolve not to act is as legitimate an outcome of decision-making as to resolve to act. The RMIT case study provides an example of research which provided support for not radically changing existing practices (see Selby Smith, et al, 1997, Volume 2). The influence of research on decisions not to act can often be difficult to establish.

Thirdly, whether research is used or has influence may not be recognised. The survey investigating the use of research by VET decision-makers found a low level of professed awareness of Australian VET research among those responsible for framing decisions; at the same time, middle level staff were providing advice to more senior decision-makers which the former recognised was based on research information. Also, at the symposium, some senior VET decision-makers who were known to be working (currently) on major policy issues where the ideas were derived from an accumulation of research-based knowledge, claimed that research had little or no impact on their work!

Decision-making in policy and planning

At the symposium, a senior State official commented that: 'it goes without saying that VET is operating in a highly complex environment, ... actually more complex than higher education and many other service areas undergoing change under government policy at the moment. This arises in large part because of industry involvement and the very substantial government structures in place that don't exist in many other government areas. The result is that there is a myriad of coordinating arrangements and committees that make life anything but plain'. A not dissimilar comment has been made in relation to the User Choice case study: that the VET decision-making setting is complex, complicated, dynamic and contested.

In Australia, both at the Commonwealth and at the State and Territory Government levels, there are a variety of policy-making processes. A presenter at the symposium identified four main types and argued that each incorporates research very differently. They are:

- pragmatic policy decision-making characterised by: no systematic consultation or research; and stakeholder views and selected research used in an *ad hoc* way to support a particular stance;
- policy decisions based on consultation: where systematic consultation is usually limited to invited participants/major stakeholders; submissions usually are oral not formal written submissions; and there is no research or limited 'ad hoc' use of research;
- policy decisions based on Green/White Paper processes: incorporating systematic consultations; opportunity for formal public submissions with no restrictions on who can put submissions; close ministerial involvement; ministerial preparation of Green Paper/discussion paper/consultation paper; opportunity for further public comment on Green Paper; and subsequent government release of new policy in official White Paper. In these circumstances there tends to be a more systematic use of research to support policy approaches, although the use of research tends still to be selective; and
- policy decisions based on independent public inquiry, where an external and expert committee is formed to undertake the inquiry: where consultations are open and wide; the public is invited to make formal submissions in addition to major stakeholders; there is systematic investigation of the body of relevant research; and new research may be commissioned. The independent recommendations are made to the government in the form of a published report; and the government considers, indeed sometimes invites, public reaction to the report before releasing its official policy response. Of course, the recommendations may be ignored, limiting ultimately the influence of research. On the other hand, sometimes the reports and their recommendations are used later or in different contexts.

On the basis of this classification, the symposium presenter argued that most key VET policy decisions have occurred through the 'pragmatic negotiated political approach' with some exceptions (for example, the Kangan Report establishing the modern TAFE system (1974); the Kirby Report establishing traineeships (1985); and the Finn Report setting training targets (1991)). Consequently, both full public consultation and systematic use of research have played a relatively small role in VET policy decisions.

The evidence from the Impact Project is not at odds with this view. First, policy-making in VET is mediated through complex Commonwealth, State and Territory government structures and arrangements. The Australian National Training Authority (ANTA) Agreement among Heads of Government is intended to establish a national system of vocational education and training in co-operation with State and Territory governments, the Commonwealth government and industry. The ANTA Board provides advice to the ANTA Ministerial Council (MINCO), comprised of Commonwealth, State and Territory Ministers having responsibility for vocational education and training. MINCO is responsible for decisions on strategic policy, national objectives and priorities for the training system. State Training Agencies are accountable to MINCO on matters of national policy and to State Ministers and Parliaments for the operational responsibilities of their agencies, including the delivery of training services through TAFE colleges and the oversight of private providers. Despite or perhaps because of these arrangements VET is a contested policy domain: between Commonwealth and State and Territory governments; between public institutions and private providers; and between unions and employers.

The User Choice case study illustrates how the use and influence of research can be mediated through the complex government structures and arrangements: specific aspects of the research had greater influence in some jurisdictions, although all the reports were used in each jurisdiction. In contrast, the Hawke and McDonald study is a case where all governments identified a common problem, sought to develop an agreed approach, and where the Commonwealth was prepared to provide extra funding: in consequence, implementation of recommendations given in the research report was much simpler.

Secondly, policy-making in VET is further complicated by the speed of the 'rate of change'. The rate of change has been said to be 'unprecedented' for the sector, implying that policy responses often need to be developed in very short time frames: the time frames of research are seen to outlast those of policy making so that research results are often 'too late'. Many decision-makers interviewed as part of the Impact Project identified the complex, changing and time-pressured nature of their operating environments as an important factor in not directly considering research evidence before taking important decisions. Relatedly, there has also been substantial staff turnover in a number of the Training Authorities. Many decision-makers interviewed were not in a position to judge or comment on activities as recently as five years ago.

Thirdly, VET policy makers' attitudes to research are important in affecting the extent to which research is incorporated in policy-making processes. At the symposium and in the Impact Project interviews *State level* officials said that research is 'not given a high priority' ... there is 'no research culture' ... VET policy makers 'are not very research literate' ... do not understand the 'research language'. Another described VET as 'self referential'. There would seem to be contradictory expectations: on the one hand, that research would provide simple answers ('without caveats') about what can be complex social phenomena, and on the other, that some organisations expect decision-makers to take responsibility for their own decisions and that to seek to research an issue could be seen as a form of procrastination. A finding from the quantitative investigations is that there is a growing impression among some senior decision-makers that research 'can't deliver the goods', that it is too slow and often does not produce timely outcomes — an attitude strengthened in some organisations where the culture appears to require decision-makers to use their own judgment rather than rely on externally sourced information.

A further factor that has operated to reduce the (comparatively weak) research culture in VET within State and Territory Training Authorities is that the spate of public service restructuring (and downsizing) has sometimes led to a reduction in the role of their research branches. This reduction has tended to distance decision-makers further from research and has deprived them of the valuable clearing house function that these branches used to perform.

At the *national level* ANTA has nurtured research into VET issues by a range of individuals and organisations. This has resulted in a considerable increase in VET research. Of course, the support for outside research does not necessarily imply that research is widely used in ANTA's internal decision-making processes. Further, ANTA has tended to fund others to undertake research on VET rather than to undertake research itself and it would not be unexpected if the outsourcing of research were to expand (relatively) following the recent substantial cuts to ANTA staffing. Whilst understandable, such a move could create a situation where ANTA's own capacity to undertake and use research in policy development is undermined. The conception of what is important to be done, how best to do it, and how to integrate research outcomes into ongoing policy development, including the continuous process of discussion and negotiation with key stakeholders cannot, in the last resort, be outsourced. It is a core function of the organisation, so long as it seeks more than merely a reactive, administrative role.

Fourth, policy-making is not driven by research alone: indeed if it were it would undermine the principles of policy formulation in a democratic society. Rather a role for research may be to sensitise policy-makers to the use of systematically derived knowledge in the development of policy. This perspective was emphasised in the information provided by senior VET decision-makers during the Impact Project: two-thirds considered that, in reaching decisions, political and strategic considerations played the greatest role, with research-based information being used (in half the cases described) to support or validate a decision taken on other grounds.

Influence on provider practice and performance

'What is it that is influencing VET providers at the moment? To speak from the perspective of a TAFE Institute Director, the fundamental starting point ... is that we are operating in a competitive market as part of or as an aftermath of the national training reform agenda;[1] and that competition internationally, between States and Territories in Australia, between providers locally and between public and private sector providers, puts everybody in a position of not only wanting to improve their practice and performance, but to be seen to be doing so by government and by our VET clients, because this gives a marketing edge and because it is a means of getting additional resources ... providers are the object of the reform process and are having to fight for their survival.'

This quote, from a senior TAFE manager, outlines many of the dilemmas facing VET practitioners and the pressures on them. The factors that influence the relationships between research and decision-making at the provider level, that is, *whether research is used and has influence*, are often similar to those described in the previous section: the complexity of the VET sector, the rate of change, and the traditional VET culture.

- VET providers operate in a complex environment, in which they need to balance: the influence of government, industry bodies, individual enterprises, and individuals; state and national policy directions, including directions indicated by industry training boards at the state and national levels; and the provision of the best possible educational experience with performance agreements negotiated by directors of TAFE Institutes and other providers. In such an environment, the ways in which research is used will be weighed up with other strategic and pragmatic factors;
- providers are also required to cope with a substantial 'rate of change' in the structure and operations of the VET system which has challenged many of the underlying assumptions about their role in it. Many are still seeking to come to grips with these changes which are a continuing feature of VET. Boud et al (1997) suggest that for many in these circumstances research is not a priority; indeed, research can appear a remote activity having little bearing on their day-to-day concerns.
- there is not a strong research-based culture at the practitioner level in VET: although a number of practitioners would have had some exposure to the interpretation of research in university-based teacher training, this would not necessarily have equipped them to make effective use of research in their decision-making. Faced with a need to decide between different alternatives, Boud et al, (1997) argue that practitioners are likely to make decisions according to past practice, their perceptions of industry needs, and local constraints rather than based on research. However, the case studies provided by Creek, and Sefton and Waterhouse show that in at least some VET provider organisations high value is placed on the contribution of research skills and attitudes to their competitive advantage.

The quantitative studies indicated that the disappearance of research branches and research units (such as the Assessment Research and Development Unit in TAFE NSW) which served entire TAFE systems also has made research results less accessible to practitioners.

When research is used, it can be used pro-actively but the Impact Project has found that it is often used to defend resources or to legitimise a decision already made. Also, VET providers may use other information sources that could be regarded as being in 'competition' with research, as a result of externally-imposed requirements. These other sources of information include audit-style evaluations (with a focus on discernible outcomes); VET statistics and indicators; performance indicators; target benchmarks; and the results of benchmarking studies. There could be an implication that these inputs can take the place of more formal research but this is not the case. 'The research mandate must be to think the unthinkable, to reassemble accepted truths into new patterns of meaning, and to identify the sources of problems newly emerging and patterns of action and organisation which hardly at present exist' (OECD, 1995).

Where practitioners are actively engaged in research many instances have been identified where the use and influence of research has been high. There is a strong commitment among practitioners to their clients and an interest in learning new ways to improve their practice. However, there are also a number of factors that inhibit an effective contribution from research: a lack of access, for example to on-line databases and to libraries which tend to focus their collections on student support material; tight financial constraints so that practitioners do not have access to time or funds to undertake or even participate in research activities (the few sources of external funding available are not well-known and their requirements often intimidate practitioners); and practitioners are often concerned with issues for which quantitative research methods are not appropriate, but report an unwillingness on the part of central agencies or senior management to support research which does not result in quantifiable outcomes.

At the level of individual practitioners, there would also seem to be obstacles to individual trainers strengthening their connection with research and being influenced by it. Such obstacles can include the notion of teaching and learning as an 'art'; the absence of a personal obligation to systematically assess the outcomes of the teaching and learning process; and lack of competence in research methods (OECD, 1995).

At the symposium a provider commented on a growing body of *market research* being undertaken by VET providers; that is, research which is 'commercial-in-confidence'. This growth is in response to a number of factors: increased competition among VET providers for students; shifts in market demand; and the need to tailor VET offerings to the specific needs of a number of client groups. Of its nature the extent of such research is difficult to establish, but the research team's impression is that the volume of such research is increasing and that providers are assigning to it greater importance.

Community relations

Community relations are concerned with the interactions between VET and wider economic, political and societal systems. These interactions are multi-faceted and they can occur at all levels: national, state and territory, regional, local and between individuals; they can be conducted through formally constituted channels or informally; and they can be structured or *ad hoc*.

'Community' in this context includes a wide range of actors: the business community; the union movement; adult and community education groups; and local government. Some of these communities are significant stakeholders in VET in that they have a particular interest in the outcomes of VET decision-making ('we have a major stake in VET'). Often they have the ability to influence those decisions directly. For example, peak employer bodies and individual business people are formally represented on the ANTA Board, on State Training Authorities, on Industry Training Advisory Boards (ITABs) and on the councils of individual provider organisations. The trade union movement is similarly represented.

In these formal roles the 'community' groups are users of research for decision-making and they may also influence the research agenda. Each of the individual stakeholder organisations uses research to advance their own interests in a range of fora: they deploy a wide range of information, including research-based information, as part of their engagement with the ongoing debates about current political and policy imperatives. Another use of research for them relates to their communications with constituents. The constituents generally are not interested in research and related questions unless there is some direct benefit for them. Rather they rely on the organisation, and key staff within it, to keep up to date with relevant developments, safeguard their interests and advise them of significant aspects. The type of research they use would seem to be that which is short-term and instrumental.

More generally, many of the questions these groups address do have their ideas sourced in research, but the groups, and even more so their individual constituents, often do not know where the ideas originated (nor is it necessary that they do). However, this lack of awareness of the source of ideas among influential stakeholders can bear on their willingness to support research; it is important particularly where they are in a position to influence the level of funding for research and its overall directions (as where they are members of formal policy and funding bodies).

'Community' organisations do undertake research on VET questions, although the amount would seem to be comparatively small. As an employer organisation stated: 'we do not initiate much research ourselves.' Nevertheless they can be actively involved in the research enterprise: 'we are finding ourselves inundated by (VET) consultants who want employers' views quickly.' The union movement also undertakes research including on VET questions. Some of it is directed specifically at their own needs: industrial, for salary and conditions issues such as for court cases or to assist in negotiations, and research to support pedagogy. They also undertake research of a broader ideological, political and social nature, which assists them to campaign in the wider community. It was noted at the symposium that the latter type of research can play an important role for a union in an industry which is largely dependent on government funds (as in VET): this type of research is agenda setting and its links to decisions tend to be cumulative and indirect, yet at the same time they can be influential, especially in the intermediate term.

The adult and community education sector (ACE) is another VET community and one which can have close links with VET. The ACE sector is very varied: between and within any one State and Territory, in terms of size and resources, scope of provision, facilities, and their regional focus, and therefore the level of outcomes they can hope to achieve. In one large ACE organisation which was discussed at the symposium, there has been a concerted effort to encourage the development of a research culture: an in-house research fund was established; a research officer was appointed to encourage research projects to be undertaken by staff; a research plan was developed; personal research was encouraged; as were staff applications for external research grants. But overall it would seem that action in the ACE sector is based largely on praxis rather than research.

At the symposium it was put that some 'community' activity might be referred to as 'partisan research ... research done by organisations outside universities by those who have a particular interest and partisan view'. Partisan research can be located in 'quasi-research institutes' where their activities are close to advocacy: research is one of the weapons in their armoury. Partisan research can also be conducted or supported by research foundations which are politically oriented, in terms of the 'right' or 'left'. It was argued that the importance of partisan research is increasing and that this reflects (in the U.S.) the movement of the political system more towards interest group politics. Partisan research acts to, indeed is often intended to form public opinion, to influence which ideas are in good currency and what ideas are in or out of public favour.

It is often the community's call for change, rather than direct research evidence, that produces change in both policy and practice. This call, which may be referred to as 'clamour', can both serve to initiate research and be driven by it. Research can have an impact on decision-making but the impact is mediated through community activity and the political process rather than directly (Postlethwaite, 1984).

There are three *case studies* concerned with community relations aspects of VET: in each case it is indicated that the research was used; in two cases it also had influence. Hawke and McIntyre argue that the *ACE Works* report was used and had influence because the research was commissioned by the Board of Adult and Community Education with the intention of use; but Foyster argues that the ACER literacy and numeracy studies, although commissioned by a parliamentary committee and technically sound, had no influence. The case study by Dwyer found that the research had influence in unexpected ways: through students' changed perceptions and decisions after participating in the research study. The Hawke and McIntyre, and the Foyster case studies are concerned with 'top-down' decision-making (the former where research was used and had influence; the latter where impact was minimal). The Dwyer case study is an example of 'bottom-up' decision-making: the research had influence on participants' attitudes, provider actions and community perceptions.

The Dwyer case study has challenged the linear pathways model of the transition from school to further study or work. This conclusion raised difficult conceptual and practical issues for decision-makers both at State and federal levels; the case study illustrates that research implications for decision-making based on an investigation of a real world situation in its full complexity can be difficult for policy-makers to handle.

Each of the three case studies illustrates in their different ways the difficulty of establishing the impact of research on community relations aspects.

The scope of current VET research

A researcher who has studied the relationships between research and decision-making in Australian education stated at the symposium that 'research in education, and by implication in VET, is so diverse and includes so many approaches that we are not communicating well if we just talk about 'research' with a capital R.'

The quantitative studies (reported in Chapters 4 and 5 of Selby Smith et al, 1997, Volume 1) provide empirical evidence of the pattern of VET research undertaken in Australia between 1988 and 1996. These studies were undertaken by the Research Centre for Vocational Education and Training at the University of Technology, Sydney. One thousand and sixty eight (1068) different 'significant research activities' were identified as having commenced. 863 were described as 'research and development' (R&D), 205 as 'local research studies'.

'Research and Development': When categorised by content area it was found that a substantial proportion of the 863 studies were in the area of 'curriculum development and/or delivery' and 'assessment' (71.5% of the studies: see Table 2, Chapter 4). Many of these studies were localised in their focus or content. These two areas have received a particular boost through the work associated with the development of competency standards since 1991. There is some evidence of repetition of similar work in the 'curriculum' area during the period. The other main content areas were student/trainees (18.3%) organisation and/or provision of VET (11.2%), support facilities (10.9%), and teachers/trainees (9.7%).

There has been less research focussing on 'policy and economics' and 'industry issues': 8.3% and 5.4% respectively over the whole period. However, interest was much higher in the latter half of the period (1992-1996) when these two areas accounted in total for almost a quarter of all studies. Much of the policy work has been carried out within State Training Authorities; in turn, 'policy and economics' accounted for about 60% of all research projects undertaken by them. By contrast, research activity decreased in relative importance for curriculum development and/or delivery (see Table 3, Chapter 4).

Of the 432 studies where the primary source of funding could be identified virtually all were publicly funded. 43.3% were found to be 'public-commissioned' and 38.7% were 'public-internal activity'. Only 15.7% of the studies were 'public-competitive' funded (see Table 4, Chapter 4). However, a substantial shift in the balance between the different sources of funding between 1988-91 and 1992-96 was identified, with both 'public-competitive' and 'public-commissioned' increasing and research activity within public sector agencies declining (Table 5, Chapter 5).

There have been substantial changes in the kinds of organisations involved in the conduct of the R&D activities identified. Training authorities conducted a smaller proportion of the identified VET research studies in 1992-96 than in the period 1988-91 (42.6% as compared with 26.4%). The proportion conducted by professional/industry bodies including ITABs rose, from 12.4% to 23.1%. There has also been an increase in the proportion of research studies conducted in Universities (from 9.9% to 15.8%) and in consulting organisations from 4.8% to 10.3%. Not surprisingly, Universities and consulting organisations undertook most (65.2%) of the commissioned research studies (Tables 6 and 7).

There has been a marked shift in the sites of research, to workplaces. The proportion of research studies involving one or more workplaces increased to 12% of the total studies (where this information was made available by the respondents) in the latter half of the period. On the other hand, the proportion of research studies located in TAFE College settings declined sharply from 43% to 25% of all such studies. It was commented by RCVET that this result could be affected by ANTA RAC giving emphasis to workplace learning as opposed to learning occurring in classroom settings.

Almost two-thirds of the studies located were described as applied research, and almost a quarter as strategic research. There was very little basic research carried out and not unexpectedly, virtually all of it was conducted within universities. Within the domain of Applied R&D, there was still significant variation among studies in their primary purpose and nature. A substantial proportion of studies were evaluations of programs or practices (37%) — often these were carried out as part of the implementation of various Commonwealth-funded VET initiatives, though similar situations also occurred with some State-funded programs. The other significant category (28%) involved research activities which were those intended to inform the policy-development process. Such studies now represent the greater proportion of all research activities conducted within State Training Authorities, around 60% of those conducted in 1992-96 (see Table 10).

Local research studies: Some 205 examples of local research projects were identified: collection of this information by RCVET was almost completely restricted to NSW and Victoria. The great majority of the studies located were the actions of individuals seeking to improve the operation of a teaching or other program with which they were involved. In a number of cases, the work was completed in partial fulfilment of an initial teaching qualification; in others it was part of an assigned job role. Most of these studies appear to have been relatively brief in duration and to have produced either no published report or one which had only extremely limited circulation.

Research programs: Eight (8) programs of research are identified where there were systematic attempts to build knowledge in a particular area of VET policy and practice. During the review period these programs generally were pursuing research around a common theme which has represented a government priority. These programs were:

- facilities planning investigations — TAFE NSW;
- competency standards for the professions — University of Technology, Sydney;
- cognitive psychology investigations of work-based learning — Griffith University;
- economics of education and training — Monash University-Australian Council for Educational Research;
- vocational role of ACE — UTS;
- quality improvement (the BEEP projects) — OTFE, Victoria;
- linkages between VET and higher education — DEET with various universities; and
- competency based learning and assessment — NCVER.

The data on which these findings have been based has been difficult to obtain. A substantial amount of research into VET in Australia is inaccessible: much of it is not captured on the relevant databases, and is sometimes not readily available from the organisation in which it was conducted or by which it is funded: sometimes they do not even know of its existence. Of course, some research will always be unavailable: some is confidential; some is locally generated and locally specific research; some have 'commercial in confidence' status; and some is action research which may have little applicability elsewhere. However, it is likely that these reasons do not apply to the majority of research studies carried out in VET. The inability of researchers and probably users in other areas of the VET system to access the research studies represents a major shortcoming. This situation is not confined only to VET research.

Linkages between research and decision-making

A senior VET policy maker has argued that the linkages between research and decision-making systems in VET are 'weak' ... a 'rickety bridge ... that isn't anywhere near as strong as it should be'.

The tendency in Australia has been for VET research funders to focus on 'dissemination' - 'a remote audience for research with whom communication must be established' (McGaw, 1996) -

rather than on linkages. The information obtained in the course of the Impact Project would suggest that this emphasis is misplaced, and is possibly based on the 'linear' model described earlier, in which dissemination is one of the steps that connect research with policy and practice. Dissemination is one form of linkage, albeit one which is given particular emphasis in the VET area.

This emphasis on dissemination rather than on a web of linkages may reflect a lack of understanding among some of the importance of linkages; or the absence of an otherwise strong web of linkages; or the view of dissemination as the final phase in the conduct of a research project (or all three). Dissemination activities are more easily identifiable, for example when considered in relation to particular research projects; but their effectiveness is enhanced when they operate in the context of a strong network of linkages. The wide range of dissemination approaches outlined in *The national research and evaluation strategy for vocational education and training in Australia 1997-2000* prepared by NCVER for the National Research and Evaluation Committee (NCVER, 1997) will contribute to the strengthening of linkages among the various VET stakeholders. To meet their various needs the strategy recognises that narrowly defined dissemination is not, by itself, enough.

Of course, to focus on dissemination rather than the broader concept of linkages has its political aspects. Viewed as the final stage of a project, dissemination can be thought to be the responsibility of the researchers.

To stress the concept of linkages is to be concerned with facilitating the establishment of multiple areas of collaboration between the researchers and users (and other groups), given the multiple pathways through which research can influence policy and practice. The web of linkages includes both formal and informal arrangements. Appropriately structured arrangements, for example, research advisory committees can provide a means of monitoring policy developments and concerns and of relating research to them. Huberman has identified formal linkages ('sustained interactivity') as being an important means of achieving instrumental change. However, the importance of informal arrangements were also stressed. These include the transfer of people between research and decision-making domains. People as linkages not only facilitate the flow of ideas; the movement of policy makers into research settings also provides the opportunity to capture that other benefit of research: trained personnel.

Participants at the symposium emphasised, too, the possibilities for particular research processes to act as a linkage with policy-makers, practitioners and users. This possibility was seen as important in a number of the case studies and had occurred at various levels in the VET system and in relation to links with the wider community. The conduct of research projects can also act as a linkage among researchers.

Three particular matters were raised by symposium participants and our correspondents. One matter concerned the possible use of research 'brokers'. It was argued there would always be significant differences in attitudes, cultures and incentives between the research and decision-making communities, so that there was a role for brokers to facilitate the exchange of research information between the producers of research and its potential users. Of course, where research occurs in decision-making settings (eg. research in government agencies or at the practitioner level) the linkages between research and decision-making are closer. In such circumstances there appears to be a greater likelihood of external research also being taken into account for decision-making.

A second matter relates to the role that can be played by units within government agencies which act *inter alia* to link research findings to decision-making processes. It was argued that the increasing tendency to outsource VET research does not remove the need to retain an integrative, translating and co-ordinating function within agencies. Training Authorities can only integrate new information from research effectively if they have the skilled personnel and the capacity in-house which can ask the appropriate questions, assess the evidence, and know how and when to employ it.

Finally, correspondents drew attention to the international dimension of the relationships between research and decision-making. The Australian VET sector is operating increasingly in a global environment and subject to international influences. Researchers, as well as policy-makers and practitioners, interact with their overseas colleagues as well as with those in Australia, so that the potential web of linkages is expanded substantially within and across the groups. Indeed, some Australian researchers, by influencing international agencies such as the OECD or individual overseas researchers, may eventually influence domestic policy and practice, perhaps in ways the original researchers may not recognise.

Conclusion

The research team was asked 'to review the evidence for and where possible evaluate the extent of influence of research in VET'. The *evidence* is that research has impact — use and influence — on VET decision-making, but not in the way many people think.

The research enterprise is accumulative. Much research does not stand on its own as a piece of work but adds to that which existed before. This accumulating body of knowledge contributes in decision-making to the creation of a climate of opinion and the development of a set of ideas, so that at any given time certain ideas, approaches or ways of thinking are in 'good currency', whilst others are not or are no longer. Over time, research's main contribution may be to the 'big ideas'. A number of the 'big ideas' preoccupying senior VET decision-makers in recent years are grounded in research.

The outputs of the research system also include research skills and attitudes and trained personnel (human capital). They contribute to the maintenance and development of the research system and can contribute in varying degrees to decision-making. These outputs are often overlooked: for example, they were largely ignored by 'users' at the symposium. However, the contribution of human capital to improved decision-making was demonstrated in a number of the case studies. The absence of these research outputs substantially weakens VET decision-making.

The Impact Project provides evidence that individual research studies are used and have influence on VET decision-making in policy and planning, practice and performance within provider organisations, and community relations. However, examples of individual studies may not be typical, so that the value of research cannot be judged by them alone.

It is not possible to evaluate (quantitatively) the *extent* of the influence of research on VET decision-making: the extent of its influence is positive but less than unity.

There are many different types (broadly defined) of research and these can be used in a wide range of decision-making contexts. These different types of research have varying levels of visibility to the separate groups of users and other stakeholders and affect these groups' knowledge of the extent of the influence of research. Thus, *a priori*, one cannot conclude which types of research are used and have influence more than others: it depends.

The extent of the use or influence of research cannot be determined by considering the research system alone. Its use and influence depends critically on the circumstances of decision-making in a particular context and the linkages between research and decision-making in that context. The Impact Project demonstrates there are many contexts.

There are many (potential) uses of research in VET decision-making. The extent of research's use and influence can depend upon the decision-making setting. Uses include: to resolve a particular problem; as a weapon in explicit political or bureaucratic conflict; to justify a decision already made etc.; as well as the more generally recognised use in problem solving or to assist users to increase their conceptual understanding of an issue. VET research has been used in these various ways at different times, although it is not always made explicit.

The extent to which research can be used and have influence in VET decision-making can be *enhanced* by the actions of the stakeholders.

The researchers have an obligation to be committed to the research enterprise, to keep up to date in their field, to maintain the quality of their work and to be willing to engage with their broader communities. Appropriate incentive structures will encourage such behaviour by researchers (and conversely).

The decision-makers have an obligation to be engaged with the world of ideas and to think, read and participate in intellectual debate. They cannot expect to make good decisions without thought: they have the responsibility as professionals to develop their own human capital. They are unlikely to act in this way unless the incentive structures in their work settings encourage such actions.

To the extent that a significant amount of research is now commissioned by Training Authorities and other users, these groups' actions will also influence the quality of research. A strong preference for research which is short-term and instrumental can in the longer term weaken the research base.

A weak network of effective linkages undermines the potential for research to be used in VET decision-making and to have influence. It limits the potential for the two way flow of information and people and for feedback. The emphasis on linkages rather than dissemination (narrowly defined) increases the mutual responsibilities of the parties.

Enduring linkages are based on the sustained mutual esteem and understanding of the potential contribution of each party, and where those linkages emphasis collaboration for the good of the VET system as a whole.

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The use and influence of research in vocational education and training

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In the early 1990s, Bruce Chapman of ANU drew a graph that showed, in extremely simple terms, the way in which the earnings of university graduates outstripped those of non-graduates. It was a very simple piece of research, largely using data that was already available and coming out with a result that reinforced what most people had always assumed. A simple piece of research that demonstrated the private benefit of university education and which was followed directly by the Higher Education Contribution Scheme.

Very little research has as direct, obvious and traceable an impact. It is rare to find such a direct connection, and there are many reasons why one would rarely expect to find it (Anderson and Biddle 1991). The reasons have, usually, nothing to do with the quality of the research but relate to the realities of the ways in which decisions are made—both for policy formulation and by practitioners. Decision-making is complex: there are many approaches to its analysis, and all of them highlight the complex interactions between wide range of determining elements.

The relationship between research and its outcomes is almost always complex and not easily discerned, and it is unlikely that the impact of individual pieces of research will be easily discerned. Research, as we found, has an indirect rather than a direct effect, and particular pieces of research often have only a minor effect individually (see, for example, Harmsworth 1997). Often in isolation they are incomplete in terms of their scope and the power of their explanations, but they can have more of an effect when taken together with other research. Research is also often ill-timed from the point of view of those making policy (Klein 1990).

Another reason why the impact of individual pieces of research is often not discernible relates to the contribution that researchers make. In addition to the actual research, 'researchers bring not so much discrete findings as their whole theoretical, conceptual and empirical fund of knowledge as one input to the decision-making process' (Weiss and Bucuvalas 1980).

The barriers to research leading directly to policy change have been well expressed by a writer on health research: 'On a good day, ideas may gain a hearing amidst the swirl of political considerations, but it must be a very good and rare day indeed when policy-makers take their cues mainly from scientific knowledge about the state of the world they hope to change or protect' (Brown 1991).

Examples of the impact of research

Although it is unwise to attempt any measure of the effectiveness of research by looking for direct impact, there are nonetheless some pieces of research where it is possible to track the effect that they have had. Sometimes, just sometimes, it is possible to see that a particular piece of research has a direct effect, and today I want to look at a handful; some come from the Impact of Research project last year, others are from other research that I have conducted.

Each of the examples covers, to different extents, the three main roles of research in decision-making Brown (1991):

- document, gather, catalogue and correlate the facts
- analyse and show what does not work and why
- prescribe solutions to problems.

Grading in TAFE courses

It is probably fair to say that no single issue gained more airplay in vocational education and training in NSW in the early 1990s than that of grading in a competency-based environment.

The concept of grading was against the policy of the National Training Board as being inconsistent with a competency-based system. It was also opposed by several industries as well as by the Labour Council. On the other hand, it was not just supported but demanded by other industries in order to distinguish those students who had been particularly successful in their studies. In fact, in one extreme case, one industry body not only wanted grading but wanted information on whether students had obtained their results first or second time around; and also felt that students were too bunched up and should be spread further apart in order to make the distinction between those of different abilities starkly obvious!

The way the TAFE system was set up actually served neither of these interests particularly well. It was set up to accept grades, but in order for the system to give grades, lecturers had to enter marks; this meant that grades could not be awarded according to performance criteria or level, as might be appropriate for a competency-based system.

At the same time, the issue of articulation from TAFE to universities was becoming much more prominent, and universities wanted grading for admission and credit-transfer purposes. There was also a need to rationalise the reporting of TAFE-based results with school-based results in Joint Secondary Schools TAFE courses. Basically, to use a phrase of one who was involved in those discussions, there was 'a lot of fuss and bother.'

The research was carried out by the Vocational Education and Assessment Centre of TAFE NSW (under its former name of Assessment Centre for Vocational Education) in 1994.

Compared with the confused context in which the research was carried out, the results were relatively straightforward. The main message was that merit can be recognised in a competency-based system. The results were reached by a combination of conceptual work (that is, are there ways in which merit can be recognised within a competency based framework, whilst still retaining the essential values of CBT?) and empirical studies, which surveyed stakeholders to discover what approaches would meet their varied needs.

As a result of this research, TAFE NSW now has in place a system which allows the reporting of grading within a competency-based framework. Those involved in the change pointed to the following factors that caused this quite major change:

- the research empowered those in TAFE NSW with a responsibility for policy on recording of results, by giving them 'permission' to start negotiating towards a more flexible system;
- it provided an independently-researched basis on which to proceed
- it was reinforced by the research on competence which had been carried out at UTS by Gonczi, Hager, Chappell and others, which shifted the focus from 'measurement' to 'judgment', which advanced thinking towards holistic assessment, and which generally freed up thinking about competence.

It has been recognised that NSW has done more research on this issue than any other State, and the impact is obviously greater in NSW; however, the results of this research were immediately taken up by one other State, and there is anecdotal evidence that it has been influential in other States.

The success of this research is interesting because one of the significant writers on the impact of research has claimed that 'many decision-makers have been immersed in the substance of program and policy issues for decades. They have rich first-hand experience and many direct sources of information. The contribution that social research studies can make seems marginal at best' (Weiss 1986).

And yet, in this case, and despite easily-available information that questioned the universal application of the National Training Board's ruling concerning the inapplicability of grading, nothing happened without independent research.

If the research had not been carried out, those involved guess that there would still be a much more rigid system, more aligned with the rhetoric of the time, and that, because such a system would be inconsistent with the wishes of many industries, that there would be a strong possibility of a parallel 'underground' system of reporting de-facto grades, as had in fact begun to happen in some areas.

There is also a further issue. The system which was in place was shown by the research to be conceptually without foundation and against the wishes of many industries. There was also, at the time, a number of emerging criticisms of competency based training, particularly from universities, but also to be found within one or two industry areas within TAFE NSW; there was also a large amount of hidden resistance by teaching staff who found many aspects of national training reform too challenging and who had become 'passive resisters'. Had this research not been carried out, continuation of the practices of the time could have destabilised the adoption of competency-based training.

ACE Works: the vocational outcomes of ACE courses

Throughout the early 1990's significant structural changes were occurring in Australia's VET system. In particular, governments were deliberately seeking to broaden the range of providers beyond the TAFE colleges which, until that point, had held a virtual monopoly.

While not initially established as a key part of the governmental agenda, one of the emerging categories of provider was the Adult and Community Education (ACE) sector. This sector had been recognised by the Commonwealth government as playing a vital role in the full spectrum of educational provision. The 1991 report of a Senate committee *Come in Cinderella* (Aulich, 1991) had recognised ACE as an extremely diverse sector with substantially different philosophical and structural histories in the various States and Territories. Thus by the mid-1990s there was growing interest by State and Commonwealth authorities to explore the role ACE providers were serving in VET and to consider ways in which that could be supported.

In 1992, the NSW Board of Adult and Community Education commissioned research to examine who was attending ACE in NSW and what were their motives for participation. This report, The *Vocational Scope of ACE* (McIntyre et al., 1993), identified a significant VET role being carried out by NSW ACE providers. The Board recognised the importance of expanding the base of knowledge about ACE's VET role to explore in-depth issues of both participation and vocational outcomes. Commissioned by the NSW Board in 1994 after a public tender process, this research project was carried out by four researchers from the School of Adult Education at the University of Technology, Sydney. The final report was published as *ACE Works* in 1995.

The research reported in *ACE* Works involved a mixture of quantitative and qualitative research methods. These included a largescale survey of ACE learners, mail surveys of employers, case studies of ACE providers and employers and interviews with a range of stakeholders.

Moreover, the research design was such that the research was able to address issues from multiple perspectives. Specifically, the research findings considered vocational outcomes from the perspectives of the learners, employers and industry, regional, rural and other providers and looked at ACE provision in the context of government contractual arrangements.

The primary findings of the research included:

- the lack of a defined role for ACE within the VET system;
- the value of ACE as a model of lifelong learning for the VET system;
- the limited range of VET provision available within the ACE sector;
- the problematic nature of ACE's resource base;
- the limited range of backgrounds of ACE VET participants; and
- the lack of collaborative arrangements between ACE and VET providers or systems.

The research has moved policy in new directions. The findings on ACE participation cited in the second Senate Report show how the research has challenged the accepted view that ACE has a 'compensatory or second chance role'. The finding of the relatively advantaged nature of ACE participants has led policy makers to increase their emphasis on equity strategies, and to target groups under-represented in post-school education.

The research has helped to position ACE amid the difficulties of training reform. Together with an earlier report, it helped to persuade government to include adult community education in their thinking about the new national system of vocational education and training (ANTA) and give the sector access to growth funds. The research has also challenged ideas that the 'vocational' should be narrowly rather than broadly understood.

Finally, the commissioned projects arguably have helped to establish 'research' itself as a basis for strategic policy development, as the sector continues to manage a turbulent policy environment. This relationship between policy and research is subject of further publications and an important focus of a proposed Doctoral thesis.

Specifically, the Board has used the research to enhance its formal role within the VET system and has been able to maintain a 'right' of the ACE sector to a share of VET funding within the state. It has also provided the starting point for a number of other explorations of the economic role played by ACE providers and of the economics of the sector more broadly.

This report has been cited as leading research on adult and community education in Australia. The most significant citation is in the recent report of the second Senate Inquiry into Adult Community Education in Australia, *Beyond Cinderella: Towards a Learning Society* (Senate Employment, Education and Training Committee, 1997), particularly in the section on 'Participation in and provision of ACE programs' (pp.35-80). *ACE Works* is also cited in recent nationally-funded projects on ACE (eg Bennink and Blackwell, 1996; Sharpe and Robertson, 1996; ACFE, 1993) Both this project and the earlier *Vocational Scope* are cited by Schofield's review of ACE VET courses in NSW as examples of effective strategic research by the Board.

To quote a senior bureaucrat in the NSW Department of Training and Education Coordination, the research had 'a terrific impact on positioning ACE within the VET agenda—both at State and Federal level. It provided the evidence that ACE was not primarily about 'leisure', and documented its vocational (although largely unaccredited) role.

At the time at which the research was carried out, there was considerable opposition from senior bureaucrats in TAFE NSW to the expansion of community education providers into vocational areas. The fact that the research demonstrated that this was an established role of ACE eased the challenge of obtaining funds for this purpose, thus increasing diversity and choice for those wishing to enrol in a vocational program. Without the research, funds would have been much more difficult to obtain, the ACE sector would have been further sidelined, and with it, those who enrolled in ACE.

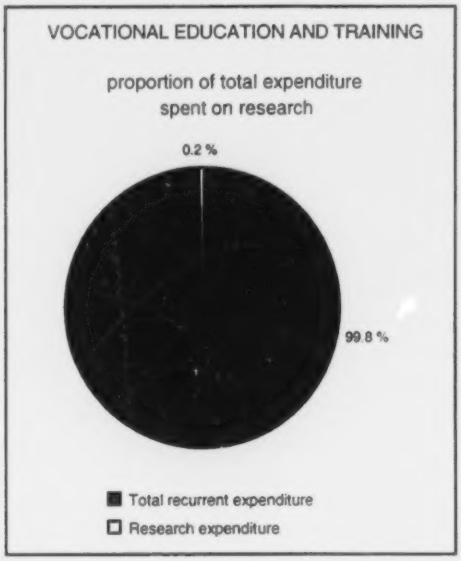
'No Small Change': A research and development strategy for VET in Australia

This research took place at a time during which all Australian Governments had agreed to work towards a common approach to vocational education and training, and at which, in retrospect, the ground was being laid for the subsequent substantial changes in VET policy.

However, it was recognised by all parties that vocational education and training had a poor research base and was ill equipped to support the expected developments. Moreover, general educational research was seen to be a significant activity of public education authorities and represented a not insignificant component (in dollar terms) of the R&D activities of Australian universities; yet there was a perceived lack of impact of this research on education policy and practice. The committee which decided to fund the research (comprised of representatives of all Australian governments) was convinced of the need for a national strategy for R&D. For these reasons, a national review of R&D within the area of vocational education and training was commissioned in 1992.

The research involved analysis of the research literature, information collected from a search conference, interviews and submissions, and subsequent analysis and further consultation.

The results of the research confirmed the poor position of R&D in vocational education and training from both a quantitative and qualitative point of view. In terms of resources, it was reported that, whereas the VET sector accounted for 28 per cent of all recurrent expenditure on education, VET research accounted for only 15 per cent of educational R&D expenditure. R&D expenditure represented only 0.22 per cent of total expenditure in vocational education and training, whereas educational R&D expenditure was 0.35 per cent of total expenditure on education.



The report also concluded that the current research effort was fragmented and that links between research and policy and practice were weak, with little fundamental and general-issues-based research in vocational education and training and no strong critique of vocational education and training policies and programs.

The report, *No Small Change,* made suggestions relating to:

- establishment of a Research Council and priority areas;
- establishment of National Centres;
- increased funding of research; and
- establishment of scholarships.

The outcomes of this review have been very positive, with essentially all of the suggestions in the report being adopted within two to three years. In addition to these direct outcomes, the report also had a less direct influence in driving the establishment of research programs in several universities, and was often described as 'required reading' for VET researchers and those developing policy on research.

Context and impact

Examining the four case studies above, there are three factors which have been particularly significant in affecting the use of research:

- cumulation
- expectations
- timeliness.

Many writers have pointed to the cumulative effect of research: that is, the effect of any one piece of research is often limited, but, over time, research studies can, in aggregate, help raise awareness among relevant decision makers of particular issues, bring ideas on to the public agenda and help them to achieve the status of 'ideas in good currency'. Where the ground is prepared change is more readily achievable.

This is borne out in the case studies above. In the Grading research, it has been stated that one of the reasons that it was so influential was due to the climate that had been created by earlier research on the nature of competence.

As well, the ACE Works research was one of a series of studies which progressively expanded our knowledge of the changing context of ACE and its increasing involvement within VET. Because it was not a single piece of work its cumulative impact was enhanced and it was seen by the sector as significantly 'adding value' to a body of knowledge which had not existed before.

An important factor in much research that is used is that it is commissioned by a body responsible for implementation of the findings, with the expectation that the commissioning body would use it. This by no means ensures use, but it improves the probability.

For example, in *ACE Works*, the research was commissioned by the NSW Board of Adult and Community Education with the clear intention that it would be used to help frame their strategic policy. Likewise, *No Small Change* was commissioned and addressed to a single agency with power to respond for the same purpose with the specific intention that it form the basis of new policy. However, it could fairly be said that those responsible for the allocation of funds were receptive to the findings that the financial support for research and development was inadequate, and were ready to allocate funds if a well-argued strategy was proposed. Impact was also aides by the report being addressed to a single agency with power to respond, rather than to a large number of agencies with different responsibilities. In a federal system, such as Australia's, this can be difficult to achieve unless there is a clearly authorised national agency which can take action. (There is an interesting comparison here with the research published as *Educational Research in Australia* (McGaw et al. 1993) which resulted in little change; one of the major reasons given is that there was not a single body in a position to commission the research and to act on its recommendations.

An obvious factor affecting the impact of research results is their timeliness. This is borne out by these case studies—*Ace Works* came out just before a crucial Senate enquiry; and *No Small Change* was prepared at a time when funding for all aspects of vocational education and training was being reviewed and increased. The case for R&D still needed to be made, of course, and there was still competition for funds but the allocation for increased R&D came from increased funds not from the re-allocation of existing funds. It was also commissioned at a time at which all Australian governments had agreed to work towards a common approach to VET and at a time at which, in retrospect, it is clear that the ground was being laid for substantial changes in VET policy, and funding generally was being increased.

Conclusion

As we have said in our report, there is no way in which anyone can prove connections between the bulk of research and its potential impacts: in fact, during the Impact of Research project, the four of use came across a number of examples of research where it would be impossible to ever know the impact, some research which had been used to justify decisions made rather than to inform them, some research that had resulted in a policy change in direct contravention of the findings, and some that had had little use or influence.

We also confirmed our view that There is evidence that research has impact (use and influence) on VET decision-making, but not in the way many people apparently think.

In fact, it is much easier to document the difficulties of measuring the impact of research than to actually assess the impact. The difficulties centre around:

- a particular research project can have an impact on a wide range of VET stakeholders, most of it untraceable
- research can influence community attitudes in unpredictable and untraceable ways

- the impact of research is often cumulative, with the effects occurring over extended periods of time.

However, the greatest difficulty arises from the fact that, as outlined above, policy decisions and changes in practice are influenced by many factors. Research is sometimes one of these. But, perhaps in VET more strongly than in some other areas—due to a decision-making setting that is described as complex, complicated, dynamic and contested—when it is, it is often because it shapes perceptions and agendas, and those making decisions are often unaware of the research on which it might be (indirectly) based.

Despite this, it is interesting that I have had no trouble in locating a number of pieces of research that have had a direct and provable impact. These pieces of research include quantitative, qualitative, practitioner-oriented, policy-oriented, and cover the areas of vocational learning, assessment, participation and equity, costs, and research policy itself.

This is in spite of the fact that there was, until recently, a very low investment in R&D in vocational education and training compared with the rest of education, which is itself low compared with other sectors. It was only in 1994 that this began to change as a result of a national strategy being put in place, and although research funds are being spent wisely as a result of that strategy, the amount being invested is still not large.

And yet: we can point to some very significant effects from, often, quite minor investments of funds. It's a good report card—for the moment!

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Forging a convergence amongst imperatives for vocational education and training

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In this paper, I am taking vocational education and training (VET) courses to be that set of learning experiences (subjects, courses, modules, programs, units) which leads to qualifications which form the Australian Standards Framework (The National Training Board 1992). Of course vocational education can be more widely defined, and one purpose of this paper is to challenge narrow views of what constitutes 'vocational'. However, in order to talk sensibly about forging convergence amongst various entities, it makes sense at the outset to differentiate those entities that the community currently sees as separate, irrespective of how flawed such a separation is.

One of the most problematic issues for vocational education and training is the achievement of a positive purpose, subject to constructive criticism, with the purpose characterised by clarity, coherence and continuity in its purpose. From such characteristics flows recognition of the nature of such education and appropriate status for it. However, in Australia, as in overseas countries, the set of institutions responsible for providing vocational education (sometimes called post-compulsory education and training) is usually negatively defined as something which is *not* school and *not* university. Other negative connotations also flow: non-academic, non-theoretical, not concerned with the whole person, not concerned with innovation; as well as connotations that can be seen as positive or negative depending on one's perspective: practical, useful, for the underachiever, for industry. This set of connotations leaves the sector vulnerable to attack and constant diversion from what it sees (at any point of time) as its charter. Some examples of the constant change in direction and charter are its changing pre-occupations in different periods of history with:

- providing alternative advanced courses to universities (the older technical colleges that grew into institutes of technology and then universities, whose associate diplomas were held in very high regard, see Martin 1964);
- providing full-time prevocational courses to overcome the effects of economic cycles on trade apprenticeships, to provide an alternative to schooling, to develop both broad and general capacities as well as specific vocational knowledge, and to broaden the technical curriculum beyond the immediate and narrow concerns of the present;
- developing the whole person through vocational education (Faure et al 1972, Kangan 1974) and providing personal development, leisure and recreational courses - represented explicitly in Kangan (1974) with the formation of TAFE, and more recently, the national system of classification of TAFE courses (Stevenson 1986) which made this more explicit than ever;
- redressing social inequities and increasing participation beyond compulsory schooling, both for future entry to vocations and for success in further study (Australian Tertiary Education Commission TAFE Council 1984);
- providing competencies perceived by 'industry' as needed in contemporary work places (The National Training Board 1990, 1992); and
- requiring TAFE institutions to move from public to private funding and provision signalled by generating growing proportions of their own income.

Thus, VET and its major provider, TAFE, constantly change shape as different interests exert new pressure on its overall shape. These changes in shape are not continuous with old shapes, anchored in some unchanging philosophy of what vocational education and training is, but in abruptly changing ideas of the very essence of this education. The latest interest is in what relationship should exist between TAFE and universities; something on which I look with some nostalgia, as when I addressed this same matter in 1987 (Stevenson 1987), my arguments for more continuity and convergence across educational sectors were thought, by powerful people, to be heresy.

The negative constructions of vocational education and training and the continuous pressures for abrupt and discontinuous changes in the essence of what constitutes vocational education and training work against continuity, coherence and clarity. In this paper, my intention is to identify and characterise some contemporary issues (most of which are ongoing), consider their origins, suggest the goals that are implicit, and consider how they might be made to converge.

Contemporary issues

A simplified way of looking at some contemporary issues in post-compulsory education and training across Western English-speaking countries is as follows (Stevenson, forthcoming).

- Improving the status of vocational education
- Achieving desirable relationships among: knowledge and work, work and general or academic education, and general and vocational education; and education and personal and social development
- Achieving desirable curriculum content: specialisation, skilfulness, job readiness; breadth and depth; knowledge development and coherence; core, key and generic skills
- Achieving desirable institutional structures: separation and integration; tracks, frameworks and lifelong learning

Let us take these issues, briefly, one at a time.

The status of vocational education continues to be low, despite government calls that it should not be, despite competency-based training, despite the rhetoric that vocational education and training is driven by industry, despite attempts to secure better articulation between vocational education and training and courses offered in universities, and despite statistics that have always shown that large numbers of those participating in adult and vocational education already have a first degree. Despite all this, young people and their parents (even those working in adult and vocational education) attach a higher status to university education.

The second issue is to do with *relationships among work, knowledge and education*. What ought to be the relationships among different kinds of learning and the knowledge that is needed in and for work? This is the most central of all of the issues and gives rise to the others. It is the unresolved nature of this issue that leads to incoherence, constant change and ambiguity in directions in vocational education and training; and it is the various stances taken with respect to this issue (both within and outside VET) that lead to the low status that is afforded to vocational education and training. These various stances gain prominence in different periods of history (eg Stevenson 1996), and contribute to the instability of VET.

For some, education for work is fundamentally different from education for all other purposes. For others, there is no education that is not and should not be vocational. Many who make the sharp distinction among education for work, education for 'general' purposes and education for personal and social growth and improvement then use this stance to legitimate, for vocational education, a singular industrial influence in curricula, the absence of personal development, the absence of critical perspectives, the absence of theoretical development and so on; and for 'general' and 'academic' education, a detachment from the specifics and the concrete of the workplace, a concern for the abstract, knowledge structured according to the disciplines, and methods of academic enquiry. From both perspectives, 'knowing' what is required for work is seen to be sharply different from those kinds of knowing valued in general and academic education.

The third issue arises from contemporary concerns for what is relevant in *vocational curricula*. Given the nature and pace of change in work, just what content is desirable to equip people for workplaces? What constitutes job readiness, what degree of specialisation is prudent, to what extent is work generic, what capacities will be needed in future situations of work and how can people be prepared to acquire them? The cries for the basics (verbal and oral literacy, numeracy', technological literacy, appropriate work attitudes), for 'generic' or core of key 'competencies' across occupations and across occupational and wider life roles (and for its precursor 'multiskilling'), for breadth, for 'underpinning knowledge' are all expressions of concern for vocational preparation that is not locked into short work time horizons. Yet at the same time the call for skilfulness with skills at the level of expertise needed in contemporary workplaces is also strong. Curriculum developers are confronted with an interesting task in seeking to reconcile such an array of imperatives: breadth, depth, specialisation, skilfulness, the 'basics', core skills, work values, and 'underpinning' knowledge. This task is made all the more perilous with the unresolved question of the relationships among work, knowledge and education, outlined above.

The fourth issue relates to *institutions*: the appropriate relationship among educational opportunities within and across the various sectors of education. The British have nicely summed this up as choices for tracks, frameworks and unity, together with the need to address the concept of lifelong learning (eg. see Spours & Hodgson 1997; Young 1997; Young et al 1997). Using these labels they contrast the following kinds of views: that education beyond the compulsory years of schooling should:

- fall into tracks - an academic track leading to university study, a specific vocational track leading to specific vocational qualifications relating to well defined occupations (eg. British NVQs), and a general vocational track leading to qualifications for sets of related occupations and/or movement back into the academic track (eg. British GNVQs);
- consist in diverse opportunities to select among the specifically vocational, the specifically academic, and the general, with clear pathways among them and the opportunity to change direction without penalty or repeating (eg. the kinds of inter-related modules that the Scottish Qualifications Authority (Gunning 1997) promotes;
- be united with a common philosophy and purpose, overcoming divides between, and incorporating both of, what is seen to be vocational and academic (an alternative not taken seriously by the British); or
- contribute continually towards the development of the individual throughout life, ie. immediate post school education should be but one of an inter-related series of experiences as one continues to seek further knowledge.

Clearly, these four sets of contemporary issues are inter-related in complex ways. Perceptions of the inter-relationships, in turn, depend on the perspectives through which one examines them. That is, for instance, if one looks at the issues through an economic lens, then one will perceive different inter-relationships than if one looks through a humanist or socially critical lens. In the following paragraphs, an attempt is made to illuminate these inter-relationships by comparing different starting points in setting goals for vocational education and training, seeking to see where there might be convergence among such goals and considering how such convergence might serve to address the issues discussed above.

Economic goals for VET

One starting point for selecting goals for vocational education and training is the set of economic imperatives that confronts national economies and workplaces within those economies. From this perspective, the purpose of vocational education and training is seen simply as the equipping of individuals with the capacities needed for work. It is from this perspective that such ideas as those of competence can arise, where the quest is to predict the capacities needed for work, and communicate these capacities to learners and those teaching them, as a basis for undertaking the required learning. From within this perspective the problem is to work out what human capacities are needed for contemporary and future workplaces. This requires both economic predictions and assumptions about the nature of the knowledge that confers the capacities needed for economic productivity. Both are problematic and each is discussed in turn, below.

Firstly, macro-economic predictions are notoriously difficult. It is of course easier to remember the predictions that were wrong than the ones that were right - the linkage of the fortunes of the Australian economy and those of the Asian tigers being but one example, not to mention the Australian public's dismissal of the Malcolm Fraser and Paul Keating governments after repeated failures of domestic economic forecasts. On the other hand, there is an uncanny relationship between some aspects of current economic circumstances and some European forecasts, now a decade or more old. The arguments of Atkinson (1984), Harvey (1989) and Hirsch (1991) (originally written in 1985) about the layering of society, the geographic and time displacement of consumption and the time displacement of debt are being lived through now. An outline of these predictions follows:

There will be a *hyper-industrialisation* characterised by:

- a new capitalist accumulation cycle fuelled by the application of such technologies as molecular, genetic and micro-electronic technologies (Hirsch 1991 (originally 1985).
- 'new systems of production and marketing, characterised by more flexible labour processes and markets, of geographical mobility and rapid shifts in consumption practices' (Harvey 1989, p. 124)
- 'entirely new sectors of production, new ways of providing financial services, new markets, and above all, greatly intensified rates of commercial, technological and organizational innovation .... [with] a new round of ...'time-space compression' ... in the capitalist world' (Harvey 1989, p. 147).
- globalised transactions coordinating the design, financing, production, stocking and sale of products; paper entrepreneuralism (Harvey 1989)

There will be a *dualisation and segmentation* characterised by:

- a 'small privileged core of highly qualified employees entrusted with the complex tasks of supervision and direction' and 'unskilled monotonous jobs directed by others' (Hirsch 1991, p. 26)
- a 'layering of society... with a new class division between 'core' and 'periphery'' (Hirsch 1991, p. 27) and 'a massive extension of new forms of subsistence work': 'new self-sufficiency' and super-exploitation in the 'informal' sector, and increase of 'independent work' at home' (Hirsch 1991, p. 28):
- 'first peripheral group' - a secondary labour market whose size can be varied with some degree of flexibility, but who have some career prospects but a high labour turnover.
- 'second peripheral group' (now growing substantially) - those engaged in short-term contracts, job sharing, working part-time and trainees, who can be engaged and disengaged with considerable flexibility.
- Outside of these groups - a market available through using subcontracting, the self-employed, outsourcing and agencies providing temporary staff. In this latter category emerge 'domestic, artisanal, familial (patriarchal) and paternalistic ('god-father', 'guvnor', or even Mafia-like) labour systems to revive and flourish' (Harvey 1989, p. 152 (emphasis added; see also Atkinson 1984, p. 29; Institute of Personnel Management 1986)
- a renewed focus on artisanal work; increased value for accurate and up-to-date information; secondary and tertiary financial markets; international, national, corporate and personal re-scheduling of debts; and short horizons for visions, goals and decision-making (Harvey 1989).

There will be tendencies towards *authoritarian statism and segmented corporatism* with -

- decentralisation, fostering private initiative and enterprise, the growing regulation of poverty and restrictions of welfare with calls for self help, and selective privatisation of public services as indicating (Hirsch 1991).
- growth in de-regulation; increased mergers; bank failures and soaring national debts (Harvey 1989).
- 'a complete reorganisation of the global financial system and the emergence of greatly enhanced powers of financial co-ordination' (Harvey 1989, p. 160);
- power moving from the state to the financial sector; a movement of governments to the Right because of 'financial disciplining' (Harvey 1989, p. 165);
- a new discourse, consisting in the use of constructs such as 'achievement, success, astuteness, privacy, family, sacrifice, morality' to replace constructs such as 'progress, equality, solidarity, collective welfare, and material security' (Hirsch 1991, p. 31).

These arguments, made more than a decade ago, seem to have been validated somewhat by what we have witnessed since that time. However, the kind of knowledge that is needed for work in such changing economic circumstances is especially problematic. That is, the kind of knowledge that one needs depends on the extent to which such qualitative changes have occurred in that part of the economy, the role that one plays in economic productivity and the extent to which that role is core or peripheral.

To illustrate the range, consider the following different kinds of activities with respect to each of the following clusters: (i) responding to new information or technologies, (ii) using that information or technology in effecting changes to the organisation and its operation, (iii) the effects on working conditions and the (iv) kinds of capacities that are called upon:

(i) Responding to information and technology

Synthesise from critical information in a timely manner

Respond to sudden changes in directions

Piecemeal production and analysis of information for sale

(ii) Making changes to the organisation and its operations

Create new markets, goods, services, spectacles

Work in flexible combinations with technology

Engage in piece-work

Create & apply new technology, equipment, materials, processes, techniques; re-configure company organisation, financing & directions, structure of work & working arrangements

Adapt to new technology, equipment, materials, processes, techniques, company organisation & directions,

Find a transient market niche

(iii) Working conditions

Drive others to work, flexibly with, & compress, time & space parameters

Work intensively for long hours in monotonous endeavours

Negotiate working conditions and rewards

Work in teams & alone with reducing rewards and conditions

Work alone and in groups within a patriarchy, with uncertain rewards

Tele-commute, re-locate or work globally

Work locally and at home in fixed location

Drive legal & financial parameters and human, physical & financial resources to limits

Work under reducing conditions

Accept sweathouse conditions

Set, work to & monitor increasingly demanding performance criteria

Work to, monitor & account for increasingly demanding industry standards

Meet patriarchal, familial or craft standards

Massive complex remuneration packages

Making a living from a combination of activities

Retrenchment, diminishing pensions and welfare payments

(iv) Capacities:

Plan strategically & opportunistically, yet generate highly skilled and productive performance

Create new skill demands, yet continuously re-skill

Develop flexible yet broad and highly polished capacities

Both create and apply new capacities

Thus, it does not make sense to argue that there is a single set of forces at work in the economy, impacting on work in a homogeneous way; nor to argue that the qualitative impact on the capacities needed for productive work is uniform. Rather, it seems that gaps are widening between the few called upon to be creative and innovative in generating new ideas about technology, commerce and production and the many either without work or working under diminishing social conditions. Thus, it seems somewhat glib to argue that the way of the future, solely, is the constant re-configuration of teams to achieve new tasks.

> Knowledge is produced by configuring human capital. However, unlike physical capital, human capital is potentially more malleable. Human resources can be configured again and again to generate new forms of specialised knowledge. The ability to do this lies at the heart of many economies of scope which are currently regarded as crucial to survival in the workplace (Gibbons, Limoges, Nowotny, Schwartzman, Scott, & Trow 1994 p. 13).

Socially critical goals for VET

A socially critical lens is another through which to select goals for vocational education and training. From this perspective, the purpose of vocational education and training would be to seek improvements in the nature of economic activity which benefits society as a whole. For instance, it is the claim of Universities that it is their studies which involve sufficient detachment from the routines of society to stand back and take a critical stance, an unbiased view, a fresh perspective, free from the demands and vested interests of the everyday.

Moreover, a socially critical perspective would assist to overcome what Gleeson (1994, p. 77) refers to contemporary discourses in education:

> A central problem lies in the dominance of a'master discourse', which suppresses diversity and pluralism, including alternative views of knowledge, learning and citizenship. Moreover, it limits the kinds of questions that can be legitimately asked in society, in terms of defining problems, solutions and policy options. The danger here is that notions of society' and 'the public good' give way to individualism and self-determination, with education reduced to the production of ideal individuals, who are separated off from the *social relations*, which sustain them.

Translated into the world of work, a socially critical purpose might be to develop capacities needed to actively reconstitute economic and social conditions, in order, for instance, to:

- protect traditional craft skills, cultures and the environment;
- reinstate traditional family and communal structures
- overcome the monetary mediation of social relations
- overcome the atomisation of individuals
- re-build relationships (family, local support groups, national and international) (alone, in collaboration with, and leading others)
- resist the regulating, controlling and surveillance state
- overcome the intensity required in productive work and
- fashion constructive and collaborative local, global and international relationships.
- re-build the environment (locally, nationally, internationally) (alone, in collaboration with, and leading others)
- re-build cultures (traditional, trade, community ...)
- consume in culturally and ecologically sensitive ways

- provide at the family and local levels for the aged, sick, disabled
- create markets based on cultural and ecological enrichment
- innovate in culturally and ecologically friendly ways
- produce and sell in culturally and ecologically friendly ways
- configure work so that it engenders sharing, co-operation, responsibility, challenge, personal growth, social contribution ...; and complements non-work activities and pursuits

Humanist goals for VET

A third basis for construction of vocational education goals is a humanist philosophy. Here, a humanist lens is taken to be one which gives primacy to the individual, rather than the economy or society more generally. It sees, as valuable, the individual's own perception of needs and goals and the individuals' development towards those goals (Rogers 1969; Knowles 1979 1980). These perspectives go beyond the singular cognitive view of Peters (1966), but include all aspects of individual development. A problem, however, with such a perspective, is that can set up the individual and society in opposition. Moreover, when set up in opposition, it needs to be noted that it is this stance that leads to much of the argument about why general or academic education is fundamentally different from (and therefore of a higher status than) vocational education. Such phrases as 'education for its own sake', 'education for the development of the individual and full potentialities', 'education of the whole person', and so on serve to legitimate such a differentiation.

On the other hand, credence for a humanist perspective is advanced by a changing economy where there are fewer jobs than applicants, where it is the personal resourcefulness of individuals that is valued in changing economic circumstances and where the population is ageing and engaging in more leisure pursuits. Indeed, a good case can be made that it is the personal transformation of individuals that leads to adaptability and innovativeness, rather than add-on so-called generic skills 'multiskilling' or the structure of disciplines and traditional methods of academic enquiry.

At the moment then, if one takes an economic perspective as an example of how a singular weight is sometimes given to the needs of society as a whole, and a humanist perspective as sometimes giving exclusive weight to the needs of the individual (and perhaps the individuals relationships with others), one can summarise the kinds of goals that could be set for vocational education as follows:

- transforming the *individual* in relation to the self (eg. development of knowledge - the capacity-to-do, self-control and responsibility)
- transforming the individual's relationships with *others* (eg. caring, justice, equity, harmony, inter-dependence, collaboration)
- transforming *society* itself (eg. local, national and international interests and inter-relationships; the economy; the environment; research and knowledge development).

Forging a convergence

Perhaps the most reconciling lens through which to set goals for, and examine the purpose of, vocational education and training is one which places a humanist perception within a concern for society. Then, it is the individual, not only in relations to their own needs, but also in relation to society that come into focus. Ironically, it seems it is through commencing with a humanist orientation that the challenges of economic change are most likely to be addressed, because it is internally meaningful transformation of individuals that is the key to contributing positively and responsibly to society as a whole and to the demands for an economically productive society.

Such a view of the individual in relation to society and its implications for education was advanced by Dewey (1915, 1938) almost a century ago. That is, while humanist, Dewey did not divorce the individual from the context of society and responsibilities toward society. Indeed, it was Dewey who advocated that vocations were central to the development of meaning. While Dewey regarded a vocation as all and any of life's callings, not just paid employment, he nevertheless placed high value on paid employment as a continuous part of anyone's continuing development of meaning.

By adopting a Deweyan perspective, one takes on the following kinds of propositions:

Continuities

- there should be direct continuities between named (and paid) vocations and other life callings
- there should be continuity between technological change at work and securement of social ends
- individual and social concerns are connected
- separation of technical, critical and practical knowing involves false dualisms with inequitable social origins

Work

- working should involve looking beyond the immediate technical demands of a job
- working should involve fulfilment of aims and interests
- working should include reflection on the social place, significance and consequences of the job
- vocations assist in the transmission of culture
- any appraisal of work or industry should examine the way in which the individual is positioned in work

Knowledge, Skill and Meaning

- meaning is conscious, related to intention
- the value of knowledge is related to the extent to which it grows out of some question of concern to the learner, adds meaning and enables application
- knowledge, morality and behaviour are continuous
- meaning involves judgements of worth
- knowing how to do things has primacy over the communication of such knowledge through organised bodies of information (such organisation is arbitrary)
- the capacity-to-do is continuous with the capacity to analyse critically
- the organisation of communicable knowledge (disciplines) is arbitrary
- generic knowledge is not built up in disciplines of knowledge or as abstract principles
- vocations are important in their contributions to the development of meaning

Education

- the role of education is to reconstruct or re-organise experience in order to add to experience in such a way that new experiences will be better understood and will in turn add to knowledge

Vocational Education

- curricula drawn essentially from industrial practice perpetuate its divisions and weaknesses and social predestination
- vocational education should not discount the scientific and historic human connections of materials and processes
- education should bring the future worker into touch with problems of society and empower them in fashioning solutions

'Liberal' and 'General' Education

- liberality does not consist in uselessness for practical ends
- general knowledge means broad and flexible knowledge in the extent to which it takes account of social relationships; isolation of subject matter from context obstructs general capacities

It seems to me that such an approach acquits itself well against the challenges of economic change, the imperatives of socially critical agendas and humanist ideals. For instance, the approach places individual development of meaning, through practical experience in concrete situations at the centre of the development of meaning, the idiosyncratic structuring of that meaning and the development of a way of assigning meaning to new experiences. This approach to the development of meaning seems appropriate in ensuring that individuals are well-placed to cope with uncertain economic scenarios, to engage in the activities regarded as constituting core work and in assigning meaning to less core and more peripheral activities. The approach argues for an epistemology based more in direct experience than in the structures assigned to traditional knowledge; again acquitting itself well against arguments that there are new ways in which knowledge is being produced (Gibbons et al 1994).

By extending what counts as vocational to all of life's callings and seeking continuity in the meaningfulness that one assigns to them all, the approach works against the dualisms of academic / vocational; practical / theoretical; knowing / doing; work / life; general / specific; higher / lower order knowledge; skills / knowledge; education / training; knowledge / experience. Rather it sees all experience and the meaning assigned to all experience as connected in inextricable ways. In this way, it also works against the differentials in status afforded to different kinds of life activities, placing a responsibility on all to connect what one does with both one's own continual improvement and the improvement of society.

The approach also acquits itself well against the challenge to use education to develop the capacity to be socially critical. It assigns a central value to the individual in relation to social ends and emphasises the individual's capacity to understand their position in relation to societal forces. It also places an obligation on the individual to improve society. That is, it does not accept that vocations are limited to the routine and mechanical, nor to complicit action; but that the vocational includes reflective analysis of social ends as they pertain to action in all walks of life.

Conclusion

In conclusion, then, it is suggested that a Deweyan approach be considered in connection with the issues canvassed at the beginning of this paper. Such a perspective widens the concept of vocational (an imperative in contemporary society anyway), and enables the question of the status of vocational education to be seen in a more connected way with the status of other forms of education. It challenges the value afforded to knowledge that is not directed at the achievement of concrete ends and to singular ways of structuring knowledge.

It argues for less division between education for work and education for other purposes eg. personal and social development; arguing that meaningfulness needs to be derived from experience rather than provided in some 'general' way or derived directly from disciplines of knowledge. It nevertheless sees a place for communicating meaning derived from experience by reflecting on the connections between this and other ways of knowing. Thus, it sees no fundamental difference between the ideas of general and vocational education.

The approach gives value to specialisation, skilfulness and job readiness as a basis for other curriculum content. That is, it sees breadth and depth as being derived from experience. This is seen to be the key to coherence and the capacity to apply knowledge across contexts.

From this approach, learning is seen to occur across the lifespan; and thus it is consistent with institutional structures that promote this. That is, it is opposed to organizations of education that separate learning in such a way that what happens for one purpose at one stage of life is incompatible with what happens for another purpose or at another stage of life. That is, it makes no sense to say that the acquisition of technical capacities is a pursuit with no connection with personal or social development.

Isolated tracks are therefore inappropriate, as are frameworks with incompatible qualitative differences across elements of the framework. What is called for is a framework that gives equal value to all elements, because each element has an explicit relationship with the development of the individual's sense of meaning and the individual's capacity to pursue to their various economic and non-economic callings.

Thus, perhaps, it is a Deweyan perspective that is needed in order to forge a convergence amongst the various imperatives for vocational education and training. And perhaps such a perspective might enable vocational education and training to withstand the constant calls for changes in direction and charter.

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Conference dinner address

Gregor Ramsey
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Research Advisory Council (ANTARAC)

First, may I congratulate you on your Foundation Conference and the fact that AVETRA will be formally established at the Annual General Meeting to be held as part of this conference. Vocational education research has always held second place to other educational research, and it is pleasing to see that with the establishment of this Association, with the legacy of ANTARAC and with a re-vamped NCVER which will incorporate the work of ANTARAC, it will receive some ongoing support that it so badly needs. My congratulations too, to Leo Maglen, the Interim President, Karen Whittingham, the Interim Secretary and the implementation committee for all the good work they have done in bringing their plans to such tidy fruition.

I was present this morning for some of the opening speeches. Your Interim President raised important challenges, mainly from the researcher side, the 'supply side' of the equation, rather than the demand side or the 'who will use the research' side of the equation and the Federal Minister, I was encouraged to see, gave you his support. My hope is that he will remain supportive as your research tests the effectiveness of government policies. It may be a measure of your failure if you can get him to come again, or of his willingness to listen to 'bad as well as good' news if he does.

As someone who was in on the beginnings of ANTARAC, and who wanted to leave a research legacy in vocational education that lay outside the traditional government supported organisations, AVETRA seemed to be the best way to go: it would be fully independent, bring together those undertaking research and the users of research, and as a 'stand alone' organisation could establish its own directions, untrammelled by the influence of other educational research organisations that had shown so little interest in vocational education.

I am delighted with the response from people interested in the area. With 225 members already, this is more than double what we had hoped for at the end of the 'interim' year. Again it is a tribute to the interim committee and its Chair, Leo Maglen. But most of all it is a tribute to Karen Whittingham who captured the vision and was prepared to put in much hard work to make it happen.

Another excellent result is to see 147 registered for this Foundation Conference. I hope you can always attract the equivalent of more than half your membership to the annual conference. It also shows how people have high expectations for AVETRA, giving a forum to exchange ideas, to network, to focus issues. There is no other place where people of like interest can be as free to explore, discuss, be innovative, be critical in the vocational education area.

In the membership of the new association, there are 10 professors, all male, and six associate professors, one female. This does not seem to be a high level of fire power to bring to bear on a $2-3 billion industry. It would be interesting to compare this area with industries of comparable size, for example, agriculture or health, in terms of the number of senior academics in our universities.

There are also 33 members with doctorates, of whom 13 are female, and finally 76 'Mr's' and 100 'Ms's'. It is good to see so many women members, and I hope soon they will 'move through the ranks'. Unfortunately, although there are almost equal numbers of men and women members, my 'head count' from the back of the room this morning, showed only about 25 percent present at the meeting were women. Why is this? It is perhaps something the committee could watch.

To return to Leo Maglen's address of this morning and his interesting analysis of what would be necessary if AVETRA was to be successful and to grow. If my memory serves me, he addressed the following issues:

- the quality of the research
- the training of talented researchers
- the mentoring of young researchers
- attracting able people to research
- on-going support from funding bodies.

He also mentioned the need for constructive feedback to researchers and transparent selection processes in the decisions about research grants. I agree with all of these, but they are inputs to good research and they focus on the supply side rather than the demand side of the research equation. The Association will need to focus more on the demand side -

- what are the researchable questions to assist policy development?
- what information do the clients of vocational education research require?
- what are the best methods of disseminating research?
- how may research be made more cost effective?
- What is the best 'research strategy' for Australia's vocational education?

Chris Selby Smith using some data from an ANTA funded research project gave a good analysis of how the 'demand' side used research. From his comments, there is a big education and training job to be done on the demand side to help them know how to use research. Perhaps AVETRA will be the first research association in the whole world to focus on the demand side equally with the supply side.

A quick look at the membership suggests that 74 percent represent the 'supply' side. This may be a healthy proportion and is probably a natural balance. But if AVETRA is looking for growth, do not forget that the supply side is a much bigger pool. It is interesting to look at the breakdown in membership:

Demand Side		Supply Side	
Government	30	TAFE	75
Enterprises	16	University	68
ITABs	9	NCVER	25
Unions	1		
	56		168

I now want to spend a little time on some of the issues relating to communicating research: that is, making research information accessible to the demand side of the national education equation. This is but one aspect of a focus on the demand side, although perhaps at this stage the most important. One of the key guidelines ANTARAC established was that the design of the dissemination process was just as important as the design of the research, and that dissemination should inform research design. This needs to be taken increasingly seriously by researchers in future. If the audience for research information is mainly expected to be other researchers, no matter how important this may be, then this organisation will soon be in trouble and irrelevant.

The use of the media is essential, and I pay tribute to Warren Osmond and the *Campus Review* in this regard. They are, in establishing their VET section, providing a forum that you must all use. It is a place where policy issues can be tested, research reported and vocational education put to the forefront of university thinking in a manner that appeals to the wider client group. Don't expect to be liked if you use it as a critical forum. For example, Des Fooks' straightforward questioning and analysis of current policies in *Campus Review* has been helpful at least in allowing a voice outside those coming from governments and their agencies. Join him in reading critically government policy statements and ANTA strategies so that we accommodate to different points of view.

The Minister this morning said that 'training prepares a nation for its future and keeps it on track'. Note he said 'training' and not 'education'! I took it as an impressive piece of wisdom, but what does it mean for you as researchers, and for the demand side? Are we using training to keep the nation on track? Did we know that was what we were doing?

The Web will change or has already changed forever the way we communicate about our research, and particularly about our ideas. Our 'work in progress' can become anybody's business almost on a daily basis. We can obtain feedback from the demand side as easily as from our peers on the supply side. How will AVETRA and its members utilise this? Governments and their agencies have taken over the Web as if it is their own, drowning us with information to which we have too little opportunity to respond.

I do not know what the next piece of policy influencing research will be, but one that influenced the 'user should pay' debate at least in government in the late 80s and 90s was Peter Fensham's research on the implications of 'free' university education on the social mix of those attending university. The fact that 'free' higher education appeared to have so little effect influenced policy to the point where a profound change was introduced, leading to the introduction of HECS. It would be good to see some research on youth unemployment that clears away some of the myths and have just as profound an effect on policy.

I was also interested today in the Minister's list of what the National Research and Evaluation Committee has come up with in terms of the 'arms' of a strategy:

- economy and society
- employment
- pathways
- outcomes of training
- quality
- future issues.

They are looking for ways that the stakeholders in vocational education can be helped to improve: clearly a demand side question. Yet the big issue facing this country, globalisation, or the internationalisation of education and training is not mentioned in the list at all - unless it is to be a 'theme'.

I have been listening and looking at the research work we are doing, and there does seem to be touch of the 'thousand flowers bloom' in it all. We should be far more international in our approach: we have an immense, high quality vocational education infrastructure in Australia which we are beginning to expand into overseas markets, yet we have had very little research on it. Education and training will be an increasingly large income earner if we would only focus and co-operate. The next big question is, what will the rest of the world turn to us for in education and training? What do we do better than anyone else, or that no-one else does? I cannot think of anything especially, unless it is competency based training. I note IIR is having a conference on this topic on 26/27 February, and on looking at the program, there is not a researcher to be had. I wonder why! Remember, the demand side left to itself is a dangerous thing!

In any event, if competency based training is what we want to be known for, let's make it known and make some money out of it. It would not be what I would choose, but perhaps the market should decide. In my view, I would like to see Australia known for its research and development in the internationalisation of education and training. If we were, I think it would have a profound effect on our products.

We heard today from Chris Selby Smith that research plays only a small role in vocational education policy decisions. I hope that isn't true in the development of the next supersonic airliner, or even for the development of the Olympic Games infrastructure, lest we have a disaster akin to the Maccabi Bridge at the Jewish Games in Israel last year. Research can illuminate; it can affect decisions; it can above all, improve student learning and teacher teaching. Our research can influence what goes on at all levels: first, by at least making all levels in vocational education aware of what research already tells us, and second, by attempting to provide research to help develop policy.

To conclude, I have found vocational education slogan riddled, full of unresearched myths. There is nothing wrong with the vocational reform 'agenda'. Like the Ten Commandments, it contains some worthwhile ideals, but it is not the way the world is, or even perhaps as it should be. What are some of the myths that a little research might help:

- 'Industry driven' education and training produces more 'job ready', better qualified, more flexible people;
- Privatising training and making it more competitive improves quality and makes it more effective;
- Competency based training is the best guiding principle for curriculum development;
- Employers will support a system of training which requires them to contribute more resources and have greater responsibility for outcomes;
- Internationalising our training system will make our industries more competitive;
- Unemployment declines as the skills in the workforce increase;
- Separating training from education focuses on what employers really need;
- It is largely irrelevant how people learn their new skills: it is the skills themselves that are critical;
- A national curriculum with national packages is the most effective way to ensure quality and cost effective training;
- Industry driven education and training is appropriate for vocational education students but not for university students.

These questions all relate to our working hours on which we spend about a third of our time. Our work constrains us, defines us, and allows us new opportunities, or denies them. We need new understandings of the nature and meaning of work: new philosophies, new goals for the employer/employee partnership. We need a total package or set of understandings that puts living, learning, and working (labouring?) together into some integrated whole. No longer can our lives be seen as days of eight hours work for the boss, eight hours leisure for ourselves and eight hours sleep to recover from the other two. We are not compartmentalised; our work affects our sleep and our leisure our work. Maybe, as a group of people interested in research, you can come up with a better paradigm for work that is more relevant: one that is person driven rather than bottom line driven; output (quality of life) rather than input (working hours, leave, pay) driven, or at least considers a sensible balance of both.

Perhaps it is for this new analysis of the nature of work, the establishment of new measures, philosophies and perspectives about work that we can come to be known internationally.

Thank you, and good luck with your new organisation.

Drowning, not waving: equity target groups in the marketplace

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Concerns for the welfare of disadvantaged groups on social justice grounds have permeated education policies in Australia for some time. In 1990 the NBEET discussion paper *A fair chance for all* (NBEET 1990) identified groups in need of special attention in university equity programs. They were non English speaking background (NESB) people, women, Aboriginal and Torres Strait Islander (Indigenous) peoples, students with a disability, people from rural and remote areas and those from low socio-economic backgrounds. All but the final group, in addition to people with low literacy, numeracy and social skills, have also become target groups in VET. This is based on the assumption that they are under represented in that sector, but have not been investigated or targeted as a group with the same consistency and purpose as in higher education. *Equity 2001* argued (ANTA 1996, 3) that access has '... not been uniform across sectors of provision or across client groups. Improving access will continue to be a priority, particularly in the context of a more open and competitive training market'.

However the concern in VET has been less on social justice grounds and more on economic grounds: the perceived 'under-utilisation of our human resources ... in recognition of the high costs on governments (particularly in areas other than (VET), such as welfare payments) and the consequent restrictions on economic growth, which persisting inequalities create' (ANTA 1996, p3).

While individual groups are targeted in both sectors, it is clear, as the 1996 Higher Education Council Discussion Paper *Equality Diversity and Excellence* observed, not only that some students are in several groups (p21) and that 'there is a degree of overlap of membership of the different equity groups' (p63), but also that there appears to be a strong interaction between participation patterns and some of these membership categories (pp63-64). The evidence for this interaction was limited largely to gender. The paper observed that while this interaction '...is not an examination of the underlying causes of disadvantage, it provides some insights into the issue which should be pursued more rigorously in targeted research projects' (p64).

Our paper looks specifically at overlapping membership in VET, but rather than looking at participation, looks closely at whether the equity (or inequity) can be detected, quantitatively and qualitatively, in the outcome. It further advances our policy-based arguments in Golding and Volkoff (1997a), the brief observations about overlapping groups in Golding, Volkoff and Ferrier (1997, p10) about overlapping groups and our finding in Golding & Volkoff (1997b) that different VET provider types have different proportions of clients who belong to more than one target group.

Methodology

This paper is based on questionnaire and field interview data collected during 1996-98 with groups of VET participants, as part of a major, in progress, Australian research project for the Australian National Training Authority (ANTA), based at the Centre for the Study of Higher Education, University of Melbourne. This project focuses on the experiences over the course of training of equity target groups, in three Australian states and the Northern Territory, in six regions and a wide range of VET provider types.

VET participants were interviewed in seven client groups (women, NESB, rural and isolated, long term unemployed, with a disability, enrolled in courses for improvement of literacy, numeracy or social skills as well as a control group not selected by individual attribute). Initial interviews were conducted during 1996 with a total of 360 individuals interviewed in 55 groups.

The VET participants interviewed were studying within a range of provider types including Technical and Further Education (TAFE), community providers of labour market programs and adult and community education, commercial providers, group training, corrections education and some limited enterprise and industry based training.

Follow-up interviews were conducted face-to-face with 100 participants during 1997. Those unable to attend these interviews were asked to provide their responses to a mailed, parallel questionnaire. While questionnaires are still being returned, this paper draws on data from follow-up interviews and 57 questionnaires which have been received and analysed. Telephone interviews are currently in progress with participants for whom follow-up data is still not available. At this stage, 10 per cent of those interviewed have not been able to be contacted in any way and a further 6 per cent have declined to continue in the study. This paper therefore draws on initial and follow-up data from 157 individuals, 44 per cent of the original 1996 interviewees.

Complexities within and between groups

One of the limitations of a group targeting approach is that it takes little account of the diversity within targeted groups and fails to acknowledge membership of multiple, overlapping groups.

It is important to acknowledge intra-group differences, for example, between NESB cultural and gender groups, between groups with different disabilities (eg physical, intellectual, psychiatric, sensory), between rural and isolated locations and between Aboriginal and Torres Strait Islander communities. Without such acknowledgment, proposed strategies are in danger of failing to address the causes of disadvantage for individuals and communities who are members of those sub-groups, and potentially labelling all members of a particular group as disadvantaged.

Analyses of disadvantage can sometimes be ambiguous. Some groups have what appears to be good access but experience poor outcomes. The reverse is true for other groups. Elkins (1994) suggested that there may be as much variability between learners within a similar 'category' of difference as there is between groups.

Analysis of overlapping membership of the different target groups is largely absent in the VET literature. Golding, Volkoff and Ferrier (1997, p5) and Golding and Volkoff (1997b) identified some of the important issues associated with overlapping groups, in particular: the overlap within and between existing groups (eg Indigenous, rural and isolated) and those who are unemployed, with low skills or in custody; and the significant differences in the degree of overlap by provider type, with increasing overlap on the continuum between programs with access restricted by high fees (eg commercial providers) and those with relatively easy access and low fees (eg ACE and community providers).

Detailed analysis of unpublished ABS statistics from the *1995 TAFE Graduate Outcomes Survey* (ABS 1995) in Golding and Volkoff (1997c) has clearly mapped the overlap for TAFE graduates in 1995 for five of the ANTA target groups as well as those graduates unemployed after the course. The ABS survey categorised rural as 'outside capital cities'. When this TAFE graduate outcomes data is matched with access and participation data for the TAFE graduate cohort, a coherent picture begins to emerge. A brief summary of the overall situation for each target group in TAFE is shown in Table 1. The descriptors ('low', 'high' etc) facilitate comparison with other TAFE graduates.

Table 1 provides an analysis by equity target group of prior education and training levels (based on the proportion of TAFE graduates with prior post secondary study), TAFE participation, transition to the labour force (based on the extent to which 'unemployment' and 'not in the labour force' rates were reduced following TAFE course completion. In addition, it summarises the extent of group overlap, based on the proportion of graduates belonging to one or more other target groups. The descriptors in Table 1 (eg low, average, high) indicate the situation as compared to the norm in each case. Those descriptors which are likely to be critical, in attempts to improve TAFE graduate outcomes, are indicated in bold.

Table 1. Brief summary of the overall access, participation and outcomes situation for each TAFE graduate target group (ABS 1995 data)

Target group	Prior education and training	Access to TAFE	Transition to labour force	Extent of group overlap
Women	similar	low	average	low
Indigenous	low	high	very low	very high
NESB	high	high	average	high
Disability	similar	low	very low	very high
Rural	similar	low	high	low
Unemployed before	similar	high	very low	very high *

* Overlapping group data were only available for graduates unemployed after the TAFE course.

The analysis of group overlap revealed that for TAFE graduates generally, three quarters belonged to at least one group, 44 per cent belonged to two or more groups and 7 per cent belonged to three or more groups. The largest overlapping groups were rural women (22%), NESB women (15%), unemployed women (9%), rural unemployed and NESB unemployed (6% each). Group overlap was much more pronounced amongst graduates unemployed after the course, but also for the Indigenous group and the group with a disability.

The analysis also confirmed some outcomes-related findings for particular groups. Specifically, that Indigenous TAFE graduates were much more likely to have a disability, live outside a capital city and be unemployed after the course and that TAFE graduates who were rural, women or with a disability were more likely to be unemployed after the course.

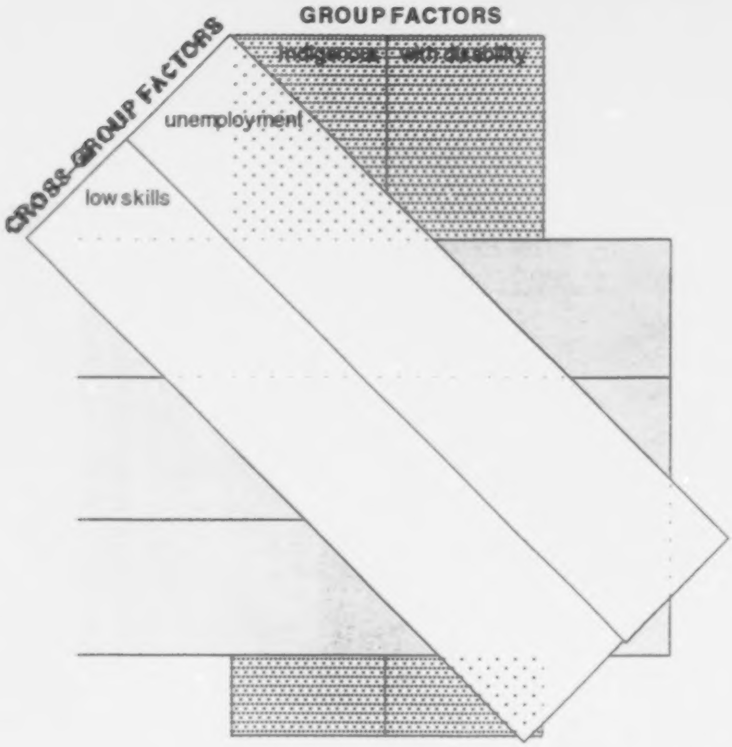
A model for accommodating diversity

The overlap identified above leads us to suggest a tentative, three sets of factors model for characterising and addressing the very complex relationship between intra-group diversity, group overlap and disadvantage in VET. It comprises three overlapping layers as follows.

- *intra-group factors:* factors that apply to subgroups within particular equity target groups. We suggest that the three largest target groups (women, rural and NESB) might be better accommodated in an equity framework by taking account of intra-group factors impinging on particularly disadvantaged sub-groups rather than relying on measures directed at all members of the group.
- *group factors:* factors that apply consistently to particular equity target groups. We suggest that because of significant differences in group outcomes as a consequence of group factors, Indigenous and people with a disability groups be targeted as priority groups, but that intra-group factors (eg Aboriginal or Torres Strait Islander; disability type) be fully considered in more specific targeting and programming.
- *cross-group factors:* factors that apply irrespective of and in addition to equity target group and intra-group factors, commonly entrenching disadvantage. We suggest that the impact of low skills and unemployment (before or after a VET program), individually or together, are particularly important in determining outcomes from VET. These cross-group factors become particularly devastating in terms of outcomes when they overlap with membership of other groups.

Figure 1 summarises this proposed model. It attempts to graphically illustrate that it is the intersection between the three sets of factors rather than group membership itself which might become the focus for most urgent attention in improving access, participation and outcomes in VET.

Figure 1. Model for accommodating diversity within and between groups in VET



Intra-group factors can be exemplified by examining the diversity within the NESB group. The term 'NESB' has been widely used to categorise groups who were born overseas and had a first language other than English, or had one of their parents with those characteristics. The term was identified in *A fair go for all* (p112, quoted in Skinner, Hunter and Vaughan 1997, p2) as no longer being appropriate as a measure of disadvantage, because of its conflicting definitions, over simplification as an indicator of disadvantage and appropriate service provision, neglect of issues of culture, linguistic diversity and identity and negative connotations. As a *Fair chance for all* (NBEET 1990, p8) concluded, NESB indicators suggest 'a deceptive homogeneity which does a disservice to those located in pockets of disadvantage'.

The Australian Bureau of Statistics (ABS) is moving towards using language background as only the starting point for examining issues of disadvantage, and incorporating a range of vulnerability factors. These factors include disability, Indigenous status, labour force status and gender. (ABS, 1997)

We provide some insights into the complexity within the NESB group using examples from the longitudinal data in our ANTA study.

M, a 55 year old rural man, from a NESB, literate in his first language, becomes unemployed after 37 years of work as a pastry cook. 'My job finished about three years ago, during the recession'. He enrols in an English literacy (open learning) course in a SkillShare provider in order to 'read and write properly in English'. He ceased education in his first language at an early age, 'didn't go to school much and would like to do this now. When you don't understand things and you don't know whether you're doing the wrong thing or not, it's a bit embarrassing and you get frustrated'. The single most important difficulty he experiences in the course is 'not enough previous education and training'. He reports that his single most important achievement twelve months later is 'gained a job'. He concludes by saying, 'Anything you can do is pretty exciting, if you can do it the right way!'

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A, a 31 year old woman, a NESB refugee, enrols in a Certificate in Spoken and Written English III at a rural TAFE Institute. A University educated teacher and speaker of two languages other than English, her aim is to improve her English sufficiently to enter a child care course. For two years she works as a volunteer in a child care centre because 'I want to improve my English and study child care qualification and I think there will be more child care job opening.' However, while the voluntary work is 'important for the organisation because I worked but they didn't pay for me ... it was not help for me to get a job ... people just want you to have more experience and even though I got a reference, people still want more experience and how do you get that experience without a job?' The single most important difficulty she experiences in the course is 'family responsibilities', caring for an ill parent. She reports that her English has improved considerably, even though she originally found 'writing is difficult because I've done different writing - Persian and Russian'. The study environment has been helpful, 'my English teacher collected a lot of people together from different backgrounds, China, Japan, America and we formed a good group together and became good friends. That is a good thing about this course, it is very important, in this class I don't feel alone.' She considers herself to be quite independent now and has passed the entry test for her next, planned course. However she expresses with frustration that she has met with unhelpful attitudes and contradictory information about course availability and access and has been unable to gain entry to her chosen course, 'I think maybe my face, my language, many things I think affect my chances if people are racist'.

H, a 42 year old rural man, from a NESB, enrols in a technical motor maintenance course at a local SkillShare. With a Doctor of Education qualification in his first language and 20 years of experience as a university lecturer in agriculture, he enrols to gain further skills to earn a living as a maintenance technician. His existing qualifications are not helpful in gaining employment in the rural area where he lives, 'Up here a degree is as much a disadvantage as an advantage. They think you won't stay, you will get some better (job) and will move on, or you are more qualified than the manager, so they are too threatened by you to take you on, think you will have their job before too long'. His qualifications are not recognised for teaching, 'They (CES) want me to do a Diploma in Education, but why? I have a Doctor of Education. I am looking into the content of the course and it is the same as mine. I have been doing it for twenty years. I wrote a book myself in doing the Doctorate'. Retraining as an educator is not available locally or by distance, so, he reports that his training in air conditioning maintenance is solely to gain skills and certification to do a specific job. 'I'm like a bird in a cage. I don't feel satisfied . . . my boss has benefited from the training . . . wants me to do more.' He concludes, 'Last year I passed the public service examination and hopefully I could now get a job in the public service, at a low level perhaps at first and then go on to become employed in my field as an agriculturalist ... What I'm looking for is Santa Claus to get me at least the lowest position in the public service to start my career again'.

G, an 18 year old NESB woman, recently arrived from a Pacific island, enrols in an Advanced English Migrant Program at a rural TAFE Institute to gain sufficient skills to complete Year 10 at High School. However, she continues her studies at the TAFE Institute in the midst of an adult migrant group to complete a Certificate III in Office Administration. While she reports that her single most important achievement is gaining more skills, she also reports gaining more confidence and making social contacts. 'When I first came (to Australia), teenagers thought I came from a very weird culture. I really needed someone to know how I felt. To be able to tell people. So when I came here (to the TAFE course), these guys knew how I felt and these guys talk to me and are my friends'. 'These guys' refers to an NESB VET group largely made up of thirty to fifty year old women and a fifty-eight year old man. She reports her single most important difficulty in undertaking the course to be 'not enough previous education and training'.

K, a 32 year old, Indigenous, rural woman enrols in an Applied Design Technology Certificate course with an Indigenous community operated training centre. Her previous formal education ceased with Year 11 and it is 15 years since she worked. Her time commitments to close and extended family responsibilities, largely in another State, potentially pose a serious difficulty. However, these are wholly accommodated by the training centre because 'this place is flexible as long as you ring up and tell them what you're doing'. Undertaking a course with mainly male participants is not a problem either. 'I don't have a problem being a woman in a class with mainly men ... they use me as a walking advertisement that a woman can do the course ... we now have four women in the course at Level 1/2. On completion of the initial course, she enrols in the more advanced stage and commences a job teaching and supporting other learners in the early stages of the course. Her outcomes include the Certificate, a job, skills and more confidence, 'I've got a whole life out of this course . . . job and further study'.

I, a 32 year old Torres Strait Islander is doing a carpentry course in prison, where 70 per cent of his fellow inmates are Indigenous, most of them NESB men with some proficiency in multiple languages. He speaks three: an Indigenous language, Creole and English. Expelled for fighting from school in year nine, he had no other formal training. In prison he also undertakes an external, correspondence university drug and alcohol course which gives useful insights into domestic violence, beyond the prison's drug and alcohol course. He reports that the prison based courses, while not accredited, are typically undertaken a number of times 'to get the points down' to get a lower classification and quicker release. He observes that 'The uni course really gives you information and makes you think. The D & A course here just looks at your behaviour, that's all'. He also observes that the warders 'still don't understand the cultural things'; most of the prison population are '... Indigenous people, very knowledgeable people ... Our men were warriors and we don't like being told what to do. If they used their manners we would respond but they don't know how to ask'. Despite his interest in working as a carpenter, no accredited TAFE course is available in prison and he can only wait to do one on release. 'I will need something like that to help me get work.'

J, a 59 year old, NESB man enrols in an enterprise based training course. His previous education and training concluded with the completion of his apprenticeship in his first language 40 years before. On arrival in Australia, 'I had all my papers, finished my apprenticeship, but couldn't start a job (trade) because couldn't speak English so start in production'. While this training, decades later, is prompted by company restructure and the increasing demand for greater skill levels and responsibility, his motivation is primarily to achieve higher rates of pay. 'Everyone does it firstly, for the money, but you learn, don't worry about that, especially on the writing.' The teacher is also from a NESB so 'he understand our problems and is very helpful ... extra help is available and you can see (the teacher) after class or during work. You can ask him questions or for ideas and he will help'. However, in relation to gaining more skills, J reports that 'we know more about it than the teacher. You can read it in the paper, but it doesn't mean then that you can do it'. While not having sufficient language and literacy skills poses difficulties, he reports more self confidence as his single most important achievement, 'Now I tell him (teacher) what I want to do ... I say, "I want to do it this way, do you agree or not agree?" and if he say to do as paper say, I do it, but maybe I find an easier way to do a better job, just now and he say, "you do it your way then"'.

It is clear from these cameos of NESB VET participants that there are many threads rather than one single thread of disadvantage associated with NESB status. There are a range of causes of disadvantage. It is too simple to categorise many NESB people as simply having low literacy skills: many are fluent, highly educated and enculturated within their own language, and are disadvantaged by having to confront what they see as an uncompromising society, culture and a workplace. The long history of setbacks experienced for many NESB people in trying to compromise, socially, vocationally and culturally, make the many positive outcomes reported in VET, such as a job, vocational skills, self confidence and social contacts even more important and more significant if achieved.

We have illustrated the complexity within only one of the *intra-group factors*, NESB. In a similar way, respondents in our study have identified many different threads associated with disadvantage by gender and location. Not all women or rural people were disadvantaged, and not all those that were disadvantaged experienced a disadvantage attributable to a single cause. Further, the effects were often different if examined from different perspectives, such as access, participation and outcomes.

Our model suggests that there are *group factors* which apply consistently and in a particularly debilitating way to outcomes for some groups, namely Aboriginal and Torres Strait Islander people and people with a disability. While clearly intra-group factors also apply to these two groups, available evidence suggests that both of these groups have very low transitions to the labour force after VET. For the former group, inequitable participation in VET appears to be tied up with low levels of prior education and training; in the latter case it is often associated with poor access. In both groups there is a striking and apparently debilitating overlap with many intra-group and cross-group factors. We conclude that the quite different outcomes which these groups report, while not caused by Aboriginality or disability *per se*, are so different that they warrant priority in policy and practice within VET as groups in their own right, for separate consideration in targeting and programming. Our conclusion is supported not only by the great diversity within both the Indigenous group (by language, culture, location) and the disability group (by disability type), but also by the national imperative in the case of Aboriginal and Torres Strait Islander people for self-determination in education and training, and for the recognised need in national VET policy for self-advocacy in relation to people with a disability.

Finally, there are some *cross-group factors* which our model suggests are particularly debilitating and marginalising, in terms of outcomes in particular. We suggest that long term unemployment and low literacy, numeracy and social skills, alone or in combination, are such debilitating factors that they act, irrespective of other categories, on all VET participants (eg English speaking, males, urban). A participant survey conducted in parallel to the interviews, identified a lack of paid work, difficulties of living on the available income and/or a lack of sufficient skills or background knowledge as the most important barriers to participation and completion. Each of these barriers is directly associated with unemployment and low skill. Certainly, they further entrench existing disadvantage associated with membership of other groups, but because they are so debilitating for all individuals and groups, we propose within our model that they fall into a category of their own.

We suggest that cross-group factors come closer than other descriptors to what might be identified as the underlying 'causes' of disadvantage. We also note that the causes of unemployment and literacy inter-relate in an insidious way. Not only does low literacy make it more difficult to work, but as Blunden (1997) observed, without the self-respect of employment, learning potential is diminished. 'When we think of ourselves as inadequate ... our learning legs are cut off at the knees (p26). A feeling of worthlessness such as that resulting from protracted unemployment '... can overpower everything else, including a sense of what we can learn ... the development of self-respect is a necessary condition for learning - literacy learning amongst other things' (Blunden 1997, p26).

In drawing together the evidence in relation to access, participation and particularly outcomes from VET from our study and from aggregated data, we are particularly struck by the evidence, effects and importance of overlapping membership of the groups which we have studied. We suspect that the overlap phenomenon and the model we propose applies particularly in the VET sector. In the more extensive higher education equity literature, people with low literacy in particular are systematically excluded in terms of access and participation. While marginalisation of some of the other groups also occurs in higher education, the overlap effects we observe in VET are particularly pronounced because of the greater diversity of provision and participation in VET, by level, course, field of study and provider type.

Analysis within the longitudinal study of employment outcomes in relation to overlapping membership of multiple equity target groups has revealed a pattern, clearly evident in Figure 2.

Figure 2. Post-course employment outcome by membership of multiple equity target groups

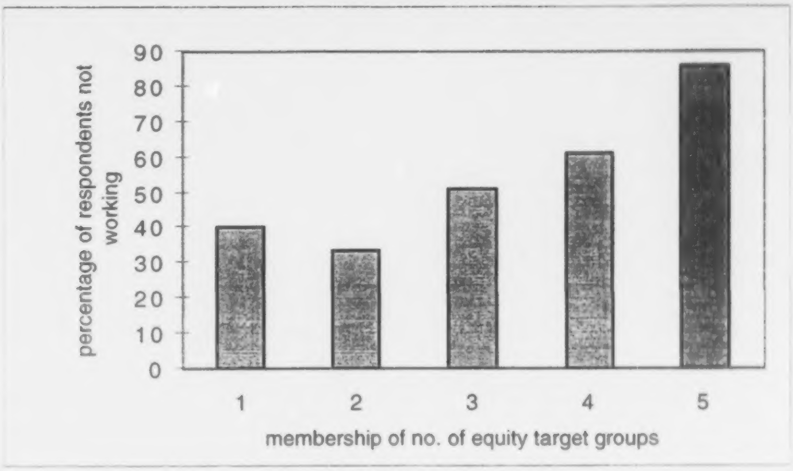
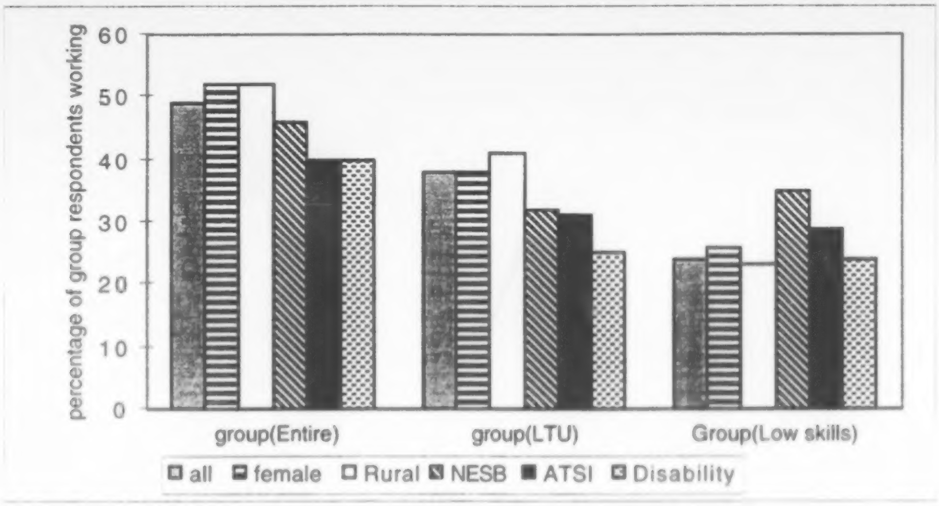


Figure 2 reveals a striking increase in the proportion not working (twelve months after our initial interview with VET participants) with increasing membership of multiple equity target groups. In order to identify whether particular groups contributed to this trend, we have disaggregated the proportion of respondents working after VET experience by the two cross-group factors in our model: previously long term unemployed and with low skills. Figure 3 shows this data by membership of other groups. It becomes clear that while employment outcomes vary by group, vocational outcomes are reduced for those members of each group who were previously unemployed, and even further reduced by the impact of low skills.

This analysis leads to the question of which particular difficulty was identified as most debilitating in terms of labour market outcomes from VET for those previously unemployed and with low skills. An examination of the single most important difficulty experienced by participants in the longitudinal study reveals that though LTU make up 57 per cent of the longitudinal study sample, they represented 70 per cent of those whose single most important difficulty was 'coping on available income'. Almost 20 per cent of all LTU participants nominated this as their single most important difficulty, experienced equally by male and female interviewees. Only women nominated 'family responsibilities and childcare' as their single most important difficulty, but 59 per cent of these women were long term unemployed. LTU also represented 67 per cent of those who reported 'not enough basic skills', 73 per cent of those who reported 'the way in which the course was taught' and 67 per cent of those who reported 'getting to classes'.

Figure 3. Post-course employment outcomes by entire group, LTU members of group and Low skills members of group



Data on participants working after the course, by group, from the longitudinal study, summarised in Table 2, support our model.

Table 2. Percentage of group participants working twelve months after the course

All	Intra-group factors			Group factors		Cross-group factors	
groups	Women	Rural	NESB	Indigenous	Disability	LTU	Low skills
49%	51%	52%	45%	40%	42%	38%	25%

The set of groups affected more by intra-group factors (women, rural and NESB) experienced employment outcomes similar to the total sample population. The set in the model affected by group factors (Indigenous and with a disability) had less successful vocational outcomes. Those in the cross-group set in the model (previously unemployed and with low skills) were much less likely to achieve a job outcome after VET.

Our metaphor in the title of the paper 'Drowning not waving' attempts to encapsulate a way of summarising and conceptualizing the situation for the groups under study. While particular, homogenous groups are easily identified, and while some have active and useful advocacy networks providing a watching brief, other are lost, perhaps drowning unseen in a sea of overlapping factors. Common factors affect more than one group and have the potential to sweep many VET participants out of reach of their goals and adversely influence their outcomes.

Acknowledgement. This paper is based on preliminary analysis of recent interview and questionnaire data from research at the Centre for the Study of Higher Education, University of Melbourne funded by the Australian National Training Authority. We gratefully acknowledge the contribution of providers, interviewees and questionnaire respondents in many areas of Australia, without whom this research would not be possible.

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Demographic factors influencing the likelihood of success in vocational education and training

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There have been a number of studies and reports in recent years concerned with access to vocational education and training and the under-representation of particular groups in further education (for example ANTA 1996a, 1996b; Butler & Lawrence 1996). In 1996, ANTA set out strategies to improve access and equity in vocational education and training in *Equity 2001*. In the report ANTA stressed that access and equity are more than providing 'equal access' to vocational education and training (ANTA 1996c, p3). Rather, strategies need to be able to deliver training and employment outcomes at least on a par with the community average for members of the identified disadvantaged groups.

In contrast to the number of studies that have provided information about the participation of individual client groups in vocational education and training (NVCER 1996, ANTA 1996b) there has been a dearth of quantitative evidence about the outcomes of individual client groups once they have accessed further education. Parkinson (1995) identified a need for impact studies to monitor the effects of policy decisions on access and equity.

The objective of this study is to provide quantitative evidence on the outcomes of individual client groups whose members have obtained access to the VET system. In addition, the study provides a baseline against which the impending changes to the VET training system can be measured. This will allow an assessment to be made in the future about the impact of the changes to VET delivery on the outcomes of individual client groups that have accessed vocational education and training.

The individual client groups that are identified in the analysis are:

- Aboriginal and Torres Strait Islander peoples
- people with a disability
- people from a non-English speaking background
- people living in rural and remote areas
- the unemployed
- early school leavers
- youth
- women

Methodology

Regression models were formulated to determine the specific effect, if any, of particular demographic characteristics on the probability of success in vocational education and training. The probit analysis model was used in preference to the linear probability model or the logit model. The linear probability model is not suitable because predictions need to be constrained to be non-negative and no greater than one and the least squares method is not, in general, fully efficient (Maddala 1993). The probit model was used in preference to the logit model because an extremely large data sample was used for estimation data sample and so the tails of the distribution are well defined.

Following Maddala (1983) the probit analysis model was specified as:

$$y_i^* = \beta' x_i + u_i,$$

where y_i^* is the underlying response variable defined by the regression relationship. As y_i^* is unobservable in practice we observe the dummy variable y defined as

$y = 1$ if $y_i^* > 0$

$y = 0$ otherwise, and

$$\text{Prob}\,(y_i^* = 1) = \text{prob}\,(u_i > -\beta' x_i)$$

$$= 1 - F(-\beta' x_i)\,,$$

where F is the cumulative normal distribution function.

This model allows hypotheses to be tested about whether a particular demographic variable has any significant effect on the probability of module success or on the probability of module completion, and provides estimates of the direction of the effect. The particular size of the effect, however, cannot be determined from the estimated coefficient *per se* because the derivative for the probabilities are not equal to β_i, as in the case of the linear probability model, but are of the form:

$$d / dx_{ik}\,(\Phi\,(x_i'\beta)) = \phi\,(x_i'\beta)\beta_i \neq \beta_i.$$

Data and variables

The analysis was undertaken using the 1996 Australian Vocational Education & Training Management Information Statistical Standard (AVETMISS) data collection, managed by the National Centre for Vocational Education Research. The unit level data was used to model the probability of success in modules, where the data set comprised students that had been assessed in modules as either having 'passed', 'failed' or 'withdrew with a fail recorded'. Because there are some modules that can be completed without formal assessment by satisfactory completion of class hours, the analysis was repeated to determine the factors affecting the probability of completing a module. In this case the entire 1996 national unit level data set was used. A 'completion' of a module was defined to be those students with a recorded result of 'student assessed - passed' or 'no assessment - satisfactory completion of class hours'. A non-completion was defined to be a recorded result of 'withdrew - without failure', 'withdrew - failed', 'student assessed - failed' or 'withdrew - transferred'.

Aggregate data can hide differences that may be occurring in particular vocational areas so the regressions were run for each field of study. The field of study classification describes the course that a student or 'client' is enrolled in and is based on the intended vocational outcome and content. The coding system is based on the DEET Field of Study Classification of Tertiary Education Courses (1990). This paper reports on the analysis undertaken at the broad field of study, or two-digit level.

As the client record data is qualitative in nature, the explanatory variables were all constructed as dummy variables — ie the variable takes on the value of '1' in the presence of a particular demographic characteristic, and takes the value of '0' otherwise. The following demographic explanatory variables were included in the regressions: apprentice; age group 1 — 15 to16 years; age group 2 — 17 to19 years; age group 3 — 20-24 years; highest-school-level-completed year 10 or less; highest-school-level-completed year 11; disabled; metropolitan residence; remote residence; rural residence; male gender; Aboriginal or Torres Strait Islander descent (ATSI); unemployed; and non-English speaking background (NESB). The definitions used in the construction of the explanatory variables are described in table 1.

In situations where the client record information associated with the client's module outcome result did not provide information on the gender of the student, or the language spoken at home, the observation was deleted from the sample. In addition, if the recorded age of the student was less than 15 the observation was deleted from the sample.

As the AVETMISS data collection does not provide information about apprentices or trainees, a proxy variable was constructed to identify students likely to be undertaking apprenticeships. An apprentice was considered to be a student who was employed and enrolled in either stream-of-study classification 3212 or 3222. Stream-of-study 3212 encompasses courses that are complete trade courses which provide initial education and training for entry to a specific trade. Such vocations require a high degree of skill, usually in a wide range of related activities, performed with minimal direction and supervision. Stream-of-study 3222 encompasses courses that are complete skills courses which provide initial education and training for entry to vocations which are not recognised trades but which require a range of skills at a similar level. Such vocations require a high degree of skill, usually in a wide range of related activities, performed with minimal direction and supervision. According to the AVETMISS classifications, in contrast to operatives, persons in such vocations are competent to carry out a broad range of related tasks.

Table 1: Construction of explanatory variables

Explanatory variable	Abbreviation (tables 3& 4)	Definition
Appentice	Appren	If client is enrolled in stream-of-study 3212 or 3222 and the person is employed than appren = 1; appren = 0, otherwise.
Age group 1 15-16 years	Agegrp1	If 15 ≤ age of client ≤ 16, then agegrp1 = 1, if age of client ≥ 17 then agegrp1 = 0.
Age group2 17-19 years	Agegrp2	If 17 ≤ age of client ≤ 19, then agegrp2 = 1, if age of client ≥ 20 or 15 ≤ age of client ≤ 16 then agegrp2 = 0.
Age group3 20-24 years	Agegrp3	If 20 ≤ age of client ≤ 24, then agegrp3 = 1, if age of client ≥ 25 or 15 ≤ age of client ≤ 19 then agegrp3 = 0.
Highest school level completed - year 10 or less	YR10	If highest-school-level of client ≤ 10 then yr 10 = 1, yr 10 = 0, otherwise.
Highest school level completed - year 11	YR11	If highest-school-level of client = 11 then yr 11 = 1, yr 11 = 0, otherwise.
Disabled	Disable	If client is disabled (self-assessed) then disable = 1, disable = 0, otherwise.
Metropolitan residence	Metro	If the postcode of residence of the client is in a metropolitan (non-capital city) area then metro = 1; metro = 0, otherwise.
Remote residence	Remote	If the postcode of residence of the client is in a remote area then remote = 1; remote = 0, otherwise.
Rural residence	Rural	If the postcode of residence of the client is in a rural area then rural = 1; rural = 0, otherwise.
Male	Gender	If the client record reports gender as male then gender = 1; If the client record reports gender as female then gender = 0.
Aboriginal or Torres Strait Islander descent	ATSI	If client is of Aboriginal and Torres Strait Islander descent (self-assessed) then ATSI = 1, ATSI = 0, otherwise.
Unemployed	Unemploy	If the client is unemployed then unemploy = 1, unemploy = 0, otherwise.
Non-english speaking background	NESB	If another language other than english is spoken at home then NESB = 1. If english is the only language spoken at home then NESB = 0.

An advantage of the extensive data set used for estimation is that asymptotic tests can appropriately be used for inference purposes. The Wald test statistic for the null hypothesis is distributed Chi-squared (1).

$$Ho: \hat{\beta i} = 0 \overset{a}{\sim} \chi^2 (1) .$$

The null hypotheses for each coefficient will be assessed at the 1 per cent level of significance. The 1 per cent point of $\chi^2 (1)$ is 6.635 (the 5 per cent point is 3.841).

Results

The results of the probit regressions modelling demographic factors that influence the probability of success in vocational education and training modules in each field of study and the probability of completing modules in each field of study are detailed in tables 2 and 3, respectively. A separate assessment on the outcomes of each individual client group undertaking vocational education and training in 1996 will be made based on the signs of the parameter estimates and the significance, or otherwise, of the Wald test statistic, as shown in tables 2 and 3.

Aboriginal and Torres Strait Islander peoples

People of Aboriginal and Torres Strait Island descent have a significantly poorer chance of successfully 'passing' a module in vocational education and training than other Australians and a significantly poorer chance of successfully completing a module in vocational education and training studies than other Australians. This result held consistently across all field of study classifications in 1996.

Worthy of note are the extremely high Wald statistics associated with the parameter estimates of the 'ATSI' coefficients on the 'TAFE Multi-field education' field of study classification. These high test statistics indicate, with a fair degree of certainty, that the probability of Indigenous Australians succeeding in this field of study is significantly less than the probability of other Australians succeeding in such studies. This is cause for concern as almost 40 per cent of the Aboriginal and Torres Strait Islander student population in VET undertook studies in the 'TAFE Multi-field education' field of study classification in 1996.

People living in rural and remote areas

The results of the analysis suggest that the probability of rural, remote and metropolitan students who have access to vocational education and training successfully passing or completing a module in vocational education and training is as good as that of city students. The location of the student was determined by the postcode of residence.

People with a disability

People who identified themselves as being disabled (comprising a wide range of disabilities such as vision or hearing impaired, physically or intellectually disabled) were less likely to successfully pass or complete a module of vocational education and training than people without a disability. For 'education', 'veterinary science, animal care' and 'TAFE multi-field education' field of study classifications a disability did not affect the probability of success or completion of a module. For all other field of study classifications, the presence of a disability significantly reduced the probability of success or module completion in 1996.

People from a non-English speaking background

The results of the analysis suggest that people from a non-English speaking background perform better in modules that allow 'satisfactory completion of course hours' to be a sufficient requirement for course completion than courses that require a 'pass' to adequately fulfill course requirements. For all field of study classifications people from a non English speaking background had a significantly lower probability of success than people from an English speaking background. However, the probability of module completion was only significantly lower for people from a non English speaking background compared with people from an English speaking background for 'architecture, building', 'business, administration, economics', 'engineering, surveying', 'science' and 'veterinary science, animal care' field of study classifications.

The unemployed

Those students who identified themselves at enrolment in 1996 as being unemployed were less likely to successfully 'pass' a module in vocational education and training and had a significantly poorer chance of successfully completing a module in vocational education and training studies than students who did not classify themselves as being unemployed.

With the exception of the 'veterinary science, animal care' field of study classification in the 'probability of success' regressions reported in table 2, the parameter estimate for the coefficient associated with the unemployment variable was significant, at the 1 per cent level of significance, for all fields of study. The parameter estimate for the coefficient associated with the unemployment variable for the 'veterinary science, animal care' field of study classification was significant at the 5 per cent level of significance.

Early school leavers and youth

Across most field of study classifications early school leavers had a lower chance of successfully 'passing' or completing a module in vocational education and training in 1996 than students who completed year 12.

In general, students aged under 25 during 1996 had a significantly poorer chance of successfully passing or completing a module in vocational education and training than older students.

In particular, students in the age group 17 to 19 years consistently, across all field of study classifications, had a poorer chance of successfully passing or completing a module in vocational education and training in 1996 than students aged 25 and over. With the exception of 'education' and 'veterinary science, animal care' studies, a student in the age group 20 to 24 years had a lower probability of successfully 'passing' or completing a module than an older student.

Women

The results of the analysis do not suggest that women who accessed vocational education and training had a poorer chance of successfully passing or completing a module in vocational education and training in 1996. Rather, the results of the analysis suggest that those women who accessed vocational education and training in 1996 had a higher probability of successfully passing or completing a module in a vocational education and training than men undertaking similar studies. The probability of successfully passing a module was significantly lower for men, compared to women, in the majority of field of study classifications. There was no significant difference in the probability of success for either gender in 'land and marine resources, animal husbandry' and 'education' field of study classifications. The only field of study classifications where men were more likely to successfully pass a module compared with women were 'architecture, building' and 'law, legal studies' field of study classifications.

Other groups

Apprentices have a higher probability of successfully 'passing' or completing modules in vocational education and training than other students in a number of field of study classification groups. Notably, apprentices had a higher probability of success and completion compared with other students in 'land and marine resources, animal husbandry', 'architecture, building', 'business, administration, economics', 'engineering, surveying', 'veterinary science, animal care', 'services, hospitality, transportation' and 'TAFE multi-field education' field of study classifications.

Conclusions

The results of this study suggest that the outcomes from vocational education and training in 1996 were influenced significantly by demographic factors and that some individual client groups who have accessed vocational education and training did not achieve the same outcomes from their studies as other Australians. In particular in 1996, the probability of success or completion of vocational education and training modules was significantly reduced for people of Aboriginal and Torres Strait Islander descent, people with disabilities, youth, people from a non English speaking background and the unemployed.

Editors Note: Statistical tables referred to may be obtained from the author at NCVER.

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Women training for transitions: a qualitative study of businesswomen's experience of VET

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Research on women business owners has been gaining momentum in Australia and elsewhere in recent years, in response to the growing economic importance of women in business (ABS 1993 1995, Business Week 1994, OECD 1992). Despite the research and public policy emphasis on getting women started in business, including in areas non-traditional for women, little work has been done on women's perceptions of the vocational education they have received - or are receiving now - as preparation for business ownership.

Controversy has also centred on how such research ought to be done. Feminist-inspired research on women's entrepreneurship has pointed out problems with survey methods, particularly sampling techniques, such as male-only samples, small samples, and samples limited by industry selection. Other problems have arisen from overly limited definitions of business success. For example, success in business has often been defined by the extent to which a firm has grown since its inception. However it may well be asked whether all women business owners are even interested in growing their businesses, and whether other definitions of success might not be more pertinent to both women and men in business. Even where some findings are relatively agreed, such as the value of networking for women, they are in need of refinement. ("How much networking?", "For what purposes?" "In what kinds of forums?" "Facilitated by government or not?" And so on.) Practical issues, such as the tendency of business owners to be impatient with paperwork - including research surveys, have also hampered previous research efforts.

This suggests a need for more qualitative approaches, and in accordance with this, our study was based primarily on a combination of individual interviews and focus groups. In all, data was gathered from more than 70 business owners. Each potential participant, following their initial expression of interest, was phoned by the researcher or an assistant and told the format and general purposes of the research. If the participant was willing and able to attend an interview or focus group, he or she was sent a copy of the interview protocol and invited to provide some demographic details about their primary business, such as the primary product(s) or service(s) it offered, its size (in terms of the number of employees), its legal form, the length of time it had been established, and so on. In the case of participants in focus groups, this information was completed in advance of the focus group sessions.

Research issues

The interviews and focus groups canvassed the following issues:

Vocational education and training . In the interview or focus group proper, business owners were asked about the adequacy of their original vocational education and training, first in terms of the skills required for the production of the primary output of the business, then in terms of the general skills required for the running of the business.

Life stage issues. The research also considers business owners' views in relation to life stage issues for business owners, particularly women. These life stage issues were addressed in two ways, first the stages of business ownership, specifically:

- thinking about starting a business
- being self-employed (ie sole proprietor or partner in a business that does not employ anyone who is not a partner)
- being an employer

- exit from the business or radical change to the business owner's involvement in it.

and secondly, the stages of the business life cycle, specifically:

- germinating the idea
- start-up
- getting organised
- building the structure
- current training needs and best practice

We also considered the specific training needs of business owners now and how they go about maintaining and improving specific skills and general learning for the business.

As an overall goal the research aimed to generate ideas for possible improvements in current approaches to VET, particularly those which would enhance women's business ownership.

Results

While the report deals with numerous issues, four of the most pervasive themes are presented here. For each, we report what our study showed, and how these results fit with the literature. Then, again for each issue, we point out what this suggests needs to be done, whether in terms of further research or public policy.

Partly because of the way the sample was constituted, which was by a series of convenience or referral techniques, the sample was extremely varied. For a number of reasons, more women than men were included, but the views of some male business owners wer included as a point of comparison.To develop a grouping of the respondents which would allow some ordering of the findings, we classified them into three groups, A, B and C, whose characteristics combine training source and type of involvement in the business. These are rough rather than mutually exclusive groupings; many of the participants had characteristics of more than one group.

Group A: Business based on a specific, TAFE-based trade, and where the business owner is involved primarily "on the tools."

Approximately half the sample of just over 70 business owners were people whose business was in an industry directly linked to the owner's initial TAFE-based qualification or in another area in which the owner held a formally accredited VET-oriented qualification, eg from a private provider or via a professional body. This part of the sample includes industries in areas non-traditional for women, especially the building and construction industries, as well as others such as housing design and drafting, plumbing, foundry work, small engineering, furniture manufacture, and so on. It also included areas that would not be regarded as non-traditional for women, such as hairdressing, restaurant management, childcare centre management, real estate, and some businesses based in visual arts areas, such as textile art and design, and general graphic design.

Group B: Business based on a specific, TAFE-based trade, and where the business owner is not involved primarily "on the tools"

Approximately a quarter of the sample was composed of people running a business in an area for which TAFE-based and other formal qualifications exist, but who are involved in running the business primarily from the administrative or "non-tools" side, often in conjunction with a tradesperson spouse. This group is often overlookded, since they tend to be regarded as "silent" partners in the business, and because their view of the training process is more removed from the perspective of either the person exercising the skills that directly create the product or service, or the person training to do this. In addition, they often tend to downgrade their own role in the business, as is shown by their descriptions of themselves, such as "just doing the administration." However from the point of view of the firm they are vital. It is often they who determine the sophistication or otherwise of systems employed, who have the prime responsibility for "people skills" with both staff and clients, and are most aware of industry level issues. Some of the most cogent views on training within a particular industry, the status of the industry, and the prospects for individuals came from representatives of this group.

As with Group A, this group included representatives of industries non-traditional for women, such as (again), construction, including general concreting, and stamped concrete paving, agricultural machinery and fencing construction, metal powder-coating, motor vehicle servicing, printing and reprographics, and continental small goods manufacture. However it also included some which are more "neutral" in this respect, that is, they are less likely to be perceived as non-traditional for women. Examples are real estate and restaurant management.

Group C: Business owners in non trade-based industries

The remainder of the sample was composed of people running a business for which no particular formal VET-oriented qualification exists, or for which none existed at the time the person undertook their basic learning for the business. As with the other parts of the sample, this group included some industries that are non-traditional for women, including financial services (mortgage introduction, individual credit rating enquiries), computer sales and servicing, agribusiness (avocado farming), rock band management. It included some that are more "neutral" in this respect, such as personnel recruitment, office training, food retailing, beauty therapy and electrolysis, book publishing, colour and image consultancy, storage facilities management, manufacture of artificial trees and flowers for interior decoration purposes, home-based clothing manufacture, and garden design.

Other factors were also diverse, such as size of firm revenue, number of employees, the life stage of the business owner, the stage of the firm itself in its life cycle, owner's experience with or preparedness to take on apprentices or trainees.

The wide variety of women business owners in the sample, and the difficulty of classifying them even in basic ways accords with earlier research findings about the "less strategic" path that women often take into business (Barrett 1994, Duchéneaut et al 1997 Hisrich & Brush 1983, Still & Guerin 1991, Stevenson, 1986). This has implications for training that will become clear later in the paper.

Participants' views on their original vocational education and training

Overall, respondents across all three groups tended to be satisfied with their training for the technical - or product/service - side of their business. For many, this was almost taken for granted. However, even though they are overall satisfied with the technical basis of their learning, members of all groups regarded the gap between the training they had received and actually starting a business meant that starting the business was like being "thrown in the deep end." However, most felt that they had personally been able to cope with this, sometimes with the help of other training or previous experience, and also that the situation for people coming into the business since had improved. Respondents who were employers also commented that they preferred their staff to have the longer, and more structured forms of training currently available, whether from external providers or via in-house training.

Many respondents across all Groups A, B and C particularly valued the generally "hands-on" aspects of their training. This hands-on quality was indispensable, however it is obtained, whether through formal external courses, those provided in-house, or from more general life experience. Owners particularly approved of training courses when they emulated the high pressure aspects of delivering the product or service "in real life." Interestingly, however, this was not to the exclusion of academic training. Virtually as many responded applauded the more theoretical aspects of their course.

Despite this, however, and sometimes as an afterthought, respondents mentioned problems with the technical side of their courses. The problems related both to curriculum and process issues. Curriculum-related sources of dissatisfaction sometimes related to the level at which the course was pitched, whether in terms of the technical level of the curriculum or parts of it, or the assumed maturity level of the participants, or a mixture of the two. Some participants who had undertaken TAFE courses had found the curriculum out of date, rigid, or unsuited to the needs of people who are older and/or already have considerable experience in the relevant industry. One informant who had taken courses in foundry work while being formally apprenticed to her husband felt that "the TAFE system has no room for mature-aged persons." A number of respondents complained that the curriculum was manifestly out of date but more often that lecturers did not know their students' well enough or were being constrained by an unseen TAFE bureaucracy. Either way, students felt their needs were not being met.

These findings accord with the more general "training for business" literature which suggests that women have a different and more varied set of training needs compared to men. In part, the findings about feeling untrained for running a business as a business are predictable given women's less "strategic" entry into business, and in any case they were not solely confined to women, although women were perhaps more emphatic about it. But it is interesting that participants did not see a more "hands-on" approach as the sole solution to either technical or business training; in fact many of the female respondents said they valued theory as much or more than practical issues.

Much TAFE research including studies of perceptions of new courses or other initiatives reiterates the value of getting "real hands-on experience." Our study does not negate this, but it does suggest that some refinement of the "hands-on" emphasis is needed, if women's learning needs or styles are to be properly taken into account in the design of the TAFE curriculum for women. It would be interesting to examine whether the value placed on hands-on experience varied systematically with the age or experience level of the respondents, or according to gender. In the present sample, which is too small to draw findings of statistical significance, men at all life stages and stages of the business seemed to make fewer appreciative comments about theory, whereas women both older and younger, and at varying levels of business experience valued theory.

The issue of industry culture

One interesting finding stems from the views of a particular sub-group in the sample: those respondents who had recently completed TAFE qualifications in non-traditional areas.Virtually no respondent, despite having reached the end of an arduous course and achieved their license, and having been unusually successful and recognised as such, now planned to actually work in the industry for which they were trained.

Several of these were relatively high-profile figures, since they had received "apprentice of the year" awards, or had received considerable media publicity as high-achieving female apprentices in non-traditional areas. Some were now prominent as leading figures in industry organisations for women. Most said that they had had no problems, or only trivial problems, during their training that they would say were gender-related.

From what they said, and their views were remarkably similar, the culture of some industries in which women have not traditionally been heavily represented still poses problems for women. This is both in terms of women's current presence in the industry and the likelihood that they will be attracted to it in the first place. A prime example is construction, although there were other industries in which gender issues arose about the culture. In fact, all respondents in this category mentioned "industry culture" as at least a contributory factor in their decision to leave the industry altogether or to work primarily on the design side of the industry.

Some speakers also mentioned the problem of training "fragmentation," which referred to a perception that different parts of the training for the industry (construction) were separated into different training areas and there is little articulation between them. This is a problem in itself. But working in the industry when training is complete even now means encountering some entrenched norms which, while not overtly about gender, still work to women's disadvantage. The tendering process is a prime example of these norms and a source of much industry animosity.

The solution in the interim for some participants is to work in the industry "in their own way". This generally meant working out of the building area directly in favour of design, which was perceived as less antithetical to women. In the case of one participant, the choice to work primarily in building design also meant that she avoided heavy manual work. But it also related to the cultural factors just mentioned, especially her perception that builders are not regarded as professionals. However, limiting ways of working to those which prevent the business owner having to deal with the unattractive aspects of the industry culture limits women to a marginal existence within the industry. At least one of the participants already "doing it her own way" still intended leaving her business in the medium term.

This finding is a disturbing extension of the consensus of the more general literature on women in business that they tend to be less likely to expand their businesses than men (CREW 1987, Goffee & Scase 1987, OECD 1987). Whereas it is common for women to continue to run small businesses when many male business owners would have expanded, especially but not only in non-traditional areas, it is disturbing that programs which are successful in getting women trained in such areas are not successful in having women go into the industry proper, let alone think about starting businesses. Moreover, the high achievers - the presumed role models - who are successful enough to have choices about their careers, are seeking other careers. As one put it, it is easier to become a consultant to government on how to get women to enter non-traditional areas as trainees or apprenticeships than to work in the industry itself.we need to explore more closely which aspects of which industry cultures are anathema to women. Both qualitative and quantitative techniques would be useful.

Training problems and knowledge of solutions

A finding that appeared to characterise both business owners - potential providers of training and apprenticeships - and students within the TAFE system was that many are unaware of solutions that have been reached to similar problems elsewhere. As an example, one owner of a restaurant employing more than 50 apprentices was unaware of the existence of the phenomenon of RPL or recognition of prior learning that would help with a problem he acknowledged: the need to recognise the skills of uncredentialled staff (kitchenhands in his case) who had acquired considerable skills in food preparation. Solutions that had been reached and were well established in some industries concerning, for example, articulation of courses, improved course delivery mechanisms, including some novel linkages between industry and TAFE, were virtually unknown in others. For many participants the experience of taking part in the research interviews of focus groups was already a way of finding out about solutions to problems that they thought they alone experienced. On an optimistic note, women in the study - particularly those in the B group - often occupied a lynchpin position in their businesses, keeping their partners abreast of industry developments and taking a major role in strategic planning.

Again, this finding extends previous research findings. Business owners readily acknowledge the difficulty of keeping on top of developments in their industry, and researchers working in qualitative mode like the writer are familiar with the phenomenon at the end of a focus group where someone says, "But is that all? I want us to do this again! I learned so much." But in this case, the problem goes further than the industry - the need is to share training innovations beyond a single industry or even related ones. Given the difficulty business owners constantly report about finding enough time for networking, and more formal ways of keeping up such as conferences, networking events which take place beyond industry bounds are still likely to be still more difficult.

Nevertheless, much is now known about how business owners currently keep up with developments in their industries, and the current study contains much qualitative data about which of these mechanisms are considered most effective, and how they are used - or not used - by women and men. The potential exists for these mechanisms to be adapted for inter-industry as well as intra-industry sharing of knowledge.

Conclusion

The study's findings, in the main, confirm and extend those of the more general business literature concerning women's training needs for business. It seems that in TAFE-based businesses, as others, women face particular problems. The most concerning of these appears to be the culture of some industries, especially but not solely those that are non-traditional for women, discouraging some of the best trained and most successful female apprentices from even seeking long-term employment in the industry, let alone self-employment. These issues - and others - need further exploration. Equally, however, this study also confirms some particular strengths of women business owners - particularly how they span the boundary between the individual trade-based firm and the broader industry scene - which point to ways in which some of the difficulties might be solved. The solutions - as well as the problems - deserve a wider press.

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What's different away from the rat race? Issues for VET in non-metropolitan australia

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This paper presents preliminary findings from a review of research literature relating to VET in non-metropolitan Australia. The project is on behalf of NCVER. Our brief is to review the literature, identify issues which impact differentially in metropolitan and non-metropolitan Australia and identify areas where more research is needed. Our thanks go to NCVER for permission to present this paper.

The scope of our research review is Australian research articles and reports since 1990. Research relating to Aboriginal and Torres Strait Islanders is the subject of a parallel project, and is excluded from the scope of this paper. This paper is a discussion of work in progress. It is not always yet clear which issues are specifically non-metropolitan, which impact differently on non-metropolitan Australia, and which issues require further research to establish whether there is a differential impact.

There has been very little research conducted on vocational education and training in non-metropolitan Australia. We have identified a body of work which is exclusively related to non-metropolitan Australia, for example studies which consider remote communities and education and training in agriculture. There is another body of work which combines both metropolitan and non-metropolitan data. Very few of these studies report any findings separated on that basis. Studies using data from both sectors tend to report on an Australia-wide or State basis. Much of the non-metropolitan research which does exist relates to curriculum or delivery. There is a smaller body of work on access and equity, and very little on training outcomes.

We are seeking your input today; are there are any pieces of research which we have overlooked, and any issues which are missing? Are the seven issues we identify here the important ones?

The context: rural and remote Australia

People living and working in rural Australia contribute much to Australia's national economic well-being. At least two-thirds of our exports are generated outside capital cities (Martin, 1996). Some of our major industries including agriculture, mining, forestry and tourism generate all or most of their economic activity outside metropolitan areas. However, perhaps more than in any other time in its history, rural Australia faces a crisis. How does vocational education and training support rural Australia to enable it to contribute to the consolidation and restructuring needed for the Australian economy to move strongly into the 21st century? Rural Australians are less likely to have post-school qualifications than their metropolitan counterparts, and are less likely to participate in vocational education and training.

Rural and remote Australia is taken to be all Australia outside metropolitan areas of 100,000 or more people. A diversity of ages, lifestyles, occupations, aspirations, educational experiences, opportunities, industries and communities are represented in rural and remote Australia. While there are many similarities between rural and metropolitan Australia, there are also some differences.

Over 37% of the population lives outside metropolitan Australia. Many young people leave rural and remote areas for education, training and employment. This is reflected in the age distribution of Australia's metropolitan and non-metropolitan areas, which shows a decline in the number of 15 to 24 year olds in rural and remote Australia matched by an increase in those age groups in metropolitan Australia (Australian Bureau of Statistics 1996 Census, unpublished data).

Rural and remote Australians are less likely to have post-school qualifications than those living in metropolitan areas, and less likely to have university level qualifications (see Table 1). Consequently, they are less likely to have previous successful experiences of formal education and training. Literacy performance is strongly linked to educational attainment (Australian Bureau of Statistics, 1997a). Table 1 below shows that rural and remote Australians are less likely to have post-school qualifications. In contrast to metropolitan Australia, more rural females than males have university and higher level vocational qualifications. A greater proportion of rural males than metropolitan males have skilled vocational qualifications.

Table 1 Percentage of population with post-school qualifications

	Male		Female	
Post-school qualification	Metropolitan	Rural & remote	Metropolitan	Rural & remote
Bachelor degree or higher	7.5%	3.8%	6.7%	4.1%
Associate diploma or diploma	3.3%	2.5%	4.2%	3.9%
Skilled vocational qualification	10.5%	12.4%	1.7%	1.6%
Basic vocational qualification	1.2%	1.2%	2.3%	2.2%
Total	22.6%	19.9%	14.8%	11.9%

Source: Australian Bureau of Statistics 1996 Census, unpublished data.

Rural and remote Australians live in communities ranging from isolated stations to regional cities of several tens of thousands. There are 23 major population centres of between 30,000 and 100,000 people, and a further 78 centres with populations between 10,000 and 30,000 (Australian Bureau of Statistics 1996 Census, unpublished data). Of the 37% of Australians who live in non metropolitan Australia, approximately one third live in larger centres (10,000 to 100,000), a third live in smaller communities (1,000 to 10,000) and the remainder are scattered outside these small and large population centres. While there has been a drift to the large metropolitan cities over the last decade, the proportion of the population living outside urban centres has remained constant (Australian Bureau of Statistics, unpublished Census data).

Where do they work?

Rural and remote Australians are more likely to work for themselves, and more likely to employ others. They are less likely to be employees than are metropolitan Australians. Many enterprises in rural and remote Australia are small or micro businesses; a larger proportion of the non-metropolitan workforce works in small businesses. A smaller proportion of those who are employed in rural Australia are employed full time (Australian Bureau of Statistics, 1997b). Unemployment is higher in non-metropolitan areas and a larger proportion not in the labour force points to further 'hidden' unemployment (Australian Bureau of Statistics 1996 Census, unpublished data).

People in rural and remote Australia are more likely to be working in agriculture, fishing and forestry; mining; tourism (accommodation, cafes and restaurants); utilities; and construction than metropolitan Australians (see Figure 1). The range of industry available in individual rural and remote locations is less diverse than that located in individual metropolitan locations.

Rural and remote Australians are more likely to work as labourers and related workers and in occupations where there has not been a tradition of vocational education and training, for example transport, farming and service sector jobs, and less likely to be professionals (Australian Bureau of Statistics 1996 Census, unpublished data).

Figure 1 Working population by industry

Industry	Metropolitan	Rural & remote
A. Larger proportion in rural and remote		
Agriculture, forestry & fishing	0.5%	11.2%
Mining	0.5%	2.9%
Construction	6.3%	7.2%
Accommodation, cafes & restaurants	4.7%	5.6%
B. Larger proportion in metropolitan		
Manufacturing	12.4%	10.4%
Property and business services	12.0%	6.7%
Health and community services	10.0%	9.3%
Wholesale trade	6.4%	4.9%
Finance and insurance	4.9%	2.2%
Cultural & recreational services	2.7%	1.9%
Communication services	2.2%	1.4%

Similar proportions: Retail trade, Education, Government admin & defence, Transport and storage, Personal and rural services. Electricity, gas & water supply. Source: Australian Bureau of Statistics 1996 Census, unpublished data.

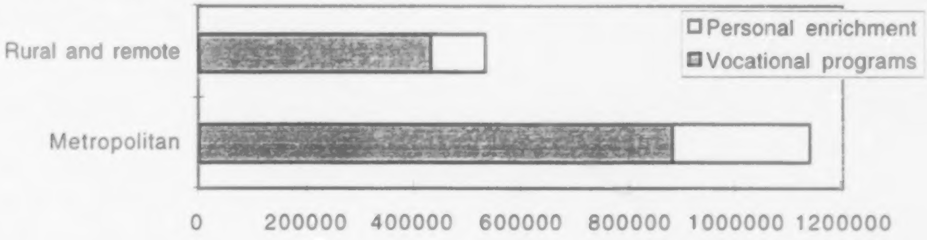
Participation in post-school education and training

Rural students are less likely to complete secondary school (Lamb 1998). Participation in post-school education and training in rural and remote Australia is lower than in metropolitan Australia. Those rural and remote Australians who do study and train are more likely to be in the vocational education and training sector than the University sector (Australian Bureau of Statistics 1996 Census, unpublished data).

Within non-metropolitan Australia there are regions of very high participation and regions of very low participation (NBEET, 1994a).

Rural and remote Australians who participate in vocational education and training are more likely to participate in vocational programs than in personal enrichment programs, as defined by NCVER (see Figure 2)

Figure 2 Clients in training activities



Source: NCVER (1997)

Rural Australians are more likely to be part time or casual workers and more likely to work in small businesses. Both these characteristics are associated with a lower time and expenditure on on- and off-the-job training. Training activity over a six month period in 1993 averaged 4.1 hours per employee for small employers (one to 19 employees) compared to 5.5 for employers of 100 or more (Australian Bureau of Statistics, 1994).

Government provided VET education and training was delivered at 1646 locations (including community centres) and by 397 private providers in 1996 (NCVER 1997). Most training in 1996 was provided by TAFE institutions, of which slightly more than half were in non-metropolitan areas. However many rural Australians do not have ready access to TAFE Institutions (Harrison, 1997).

Industry VET training plans recognise that regional and community involvement in planning must be fostered. Most industries with a large presence in non-metropolitan Australia have strategies for flexible delivery to address the training needs of rural and remote workers and enterprises. (Australian National Training Authority, 1997).

Non-metropolitan Australia is diverse in terms of population density, educational experiences of the population, occupation and industries for employment. In addition to the issues associated with the vast distances between where some Australians live and large population centres where most educational infrastructure exists, there are other differences between metropolitan and non-metropolitan Australia. Rural people are less likely to have post-school qualifications, participate in post-school education and training (especially personal enrichment programs), be an employee, be a professional and work in manufacturing, property and business services or finance and insurance. They are more likely to have left school early, be unemployed or out of the labour force, work in small business, be a self-employed or an employer, be a labourer or other low skilled occupation and work in agriculture, forestry and fishing, mining, construction or tourism.

Methodology

We searched VOCED, Australian Education Index, AUSTROM and OLEARN databases. This was supplemented by recent reports and conference proceedings held by the Centre for Research and Learning in Regional Australia and contact with researchers and policy makers with an interest in non-metropolitan VET. The scope of our search was Australian research articles and reports since 1990.

The search of the VOCED database yielded the largest number of relevant research articles and reports. A search for 'research' revealed 1319 entries, of which some were overseas items and some pre 1990. Around half of the remainder appeared to be described as 'first hand' reports of research projects. We scanned the abstracts of these, and found only a tiny proportion (47) which either explicitly stated they used data from outside metropolitan areas, or may have used non-metropolitan data. The overall number of items considered is around 70 (some of which are still to be incorporated).

We devised the following framework for considering the issues:

- access, equity and participation,
- curriculum, delivery and assessment,
- training outcomes.

Within each of the three categories we identified issues relating to:

- individuals,
- location, and
- the system.

The publication which results from this project will be structured according to our framework, but in this paper we have selected our 'top seven' issues. Some of these issues have been researched sufficiently for us to say that there is a differential impact. Others need more research before we can be certain that there is a different impact. The remainder of the issues are in our 'top seven' because the characteristics of non-metropolitan Australia suggest there is likely to be a differential impact, but there is little or no research to confirm our suspicions. We have not referenced particular issues to individual pieces of research in this paper, although references, of course, will be included in our final document. The material we have referred to to date is included as a Bibliography at the end of this paper.

Our seven issues are: local involvement in planning, thin markets, cost of training and measurement of cost and effectiveness, flexible delivery, no tradition of VET or history of valuing education, quality and availability of trainers and assessors, and community sustainability, social capital and the value of VET to communities.

Issue One: Local involvement in planning

The education and training needs of non-metropolitan Australia differ from region to region. The needs of remote locations are very different from those of larger rural centres. There is typically less diversity of demand within a single non-metropolitan area than within a metropolitan centre, for example. In many cases, broader skills are required for a job because specialists are less readily available; for example consider the local garage mechanic who must be able to work with all makes of cars, trucks and farm machinery.

Regional/local planning is better able to take account of the different demographic patterns in the various regions, and regional/local cultural differences. National industry standards do not always cater for the broad range of skills required for rural jobs. External training providers do not always understand local culture and needs, and many courses provided are not relevant to local needs. Adult and Community Education (ACE) has been successful because of its regional funding and administration; ACE is aware of local variations which state and national systems overlook.

Poor participation in post-compulsory education is often due to poor dissemination of information about programs to employers, potential students, and parents. Rural employers need more effective consultation with training providers. A 'visible' local contact point is desirable. Removal of training providers to distant centres results in distancing the providers from the community in regard to decision making and consultation. Local rural training committees or 'brokers' can facilitate interactions between training providers and rural communities. There are many models available.

Issue Two: Thin markets

Small population centres often lead to classes not running because they are not large enough to fund. This reduces the choice available to non-metropolitan students, and is likely to be a reason smaller proportion enrolled in personal enrichment programs compared to metropolitan centres.

The lack of diversity of industry in individual locations limits the range of work placements for initial VET, especially VET in schools. The capacity of the predominant small business sector to host trainees is limited by economic factors and business training infrastructure, and further reduces work placements. A declining skilled workforce decreases opportunities for training. With the move of businesses away from small communities and closure of branches, workplace training and assessment opportunities are reduced as skilled people who are potential workplace trainers move away.

Small, scattered rural and remote businesses lack bargaining power when procuring training from providers. They lack understanding of issues of quality and do not always understand the system. There is reduced tailoring of courses for particular businesses compared to large metropolitan employers.

There are few employers large enough in non-metropolitan Australia to have the necessary infrastructure to deliver a balance of enterprise specific and general competencies. Therefore most employers need to draw upon external providers for all their VET needs. Small private providers in rural and remote areas can be deterred by the high infrastructure costs imposed by accreditation and competitive tendering. When combined with pressure on public providers, this may result in a decline in the number of visible local training providers.

Issue Three: Cost of training, its measurement and effectiveness

Class sizes are smaller in smaller population centres. This means higher costs per student/contact hour, as is demonstrated by the high cost of VET per hour in Tasmania and the Northern Territory where all centres are relatively small. Costs of assessment are higher, especially in remote locations.

Students who travel to distant centres for education and training face greater transport and accommodation costs, and a spend more time on travel. This reduces the incentive to participate, especially for the existing workforce. A paucity of replacement workers compounds the disadvantage faced by the existing workforce, particularly for small businesses and the self-employed.

Resource allocation and performance indicators for VET do not fully recognise the infrastructure and development cost of flexible delivery. Existing outcome measures are not always appropriate, for example they do not account for the slower completion times of rural flexible delivery students. Treatment of fixed costs in face-to-face and flexible delivery is also an issue. Teacher/trainer employment terms and conditions do not adequately take into account the tasks required by flexible delivery. VET funding policy should address access and equity because of the greater cost of delivering education and training in rural Australia.

Issue Four: Flexible delivery

The growth of information and communications technology and advanced technology (IT & AT) will increase the access of education and training for people in non-metropolitan Australia. There are some things that can be done to enhance the opportunities for participation in VET in non-metropolitan Australia that will be generated by IT & AT.

IT & AT per se does not overcome all access barriers. IT & AT has its own set of barriers which relate to cost and physical provision of the equipment and infrastructure, training of teachers and students to maximise the benefits of technology and issues of individual learning styles. There is a paucity of training opportunities on use of IT & AT for rural people, and lack of accessible technical support. Not all students adapt well to the independent learning usually required by flexible delivery, including IT & AT.

As learning is enhanced by participant interaction, there is a need to consider the incorporation of some face-to-face component, or mentoring in flexibly delivered programs, whether they be print or technology based. Appropriate and successful training models for rural and remote locations have been developed and need to be heeded, for example itinerant teachers, mobile facilities.

More cooperation between providers is needed to maximise resources for the production of high quality materials, including Web sites.

Issue five: no tradition of VET or history of valuing education

There is not a tradition of formal vocational education and training in rural Australia. With the exception of mining, the industries which dominate non-metropolitan Australia do not have a tradition of formal VET. However, there is a long tradition of nonformal training through agricultural extension. Learning by doing is valued, but many do not recognise that they have skills acquired through experiential learning. Little immediate demand for workplace assessment in agriculture reflects the lack of training culture in the industry. There is a need to recognise the value of the informal learning which occurs in rural communities, and recognise it as a pathway to VET.

A larger proportion of the non-metropolitan population is employed in small business compared to metropolitan Australia. Small businesses employees are less likely to participate in formal VET, a fact which may or may not be linked to lower skill levels in small business jobs. Many business and families have no confidence in their ability to be informed and effective as 'consumers' of VET.

Low self confidence as a learner is widespread, and is related to previous negative experiences of schooling and low education levels. Adult and community education and providers such as SkillShare are important in providing bridging programs in rural communities, including literacy and numeracy programs. Lower average educational levels suggest that low self confidence as a learner could be more prevalent in non-metropolitan Australia, although it is likely that the impact will not be uniform across non-metropolitan Australia.

Frequent changes to the national VET system are difficult to keep up with and apply in businesses and communities which do not have a culture of education and training. In summary:

Issue six: Quality and availability of trainers and assessors

Those working in rural and remote locations require a broader range of skills than in metropolitan areas to cope with flexible delivery, and a more diverse teaching load. There is a need for professional development, especially as few adult educators in remote locations that hold formal qualifications in adult education. Professional development would help overcome staff resistance to the changes required for flexible delivery. There is a need for more trained assessors. A peer support system among remote area educators may improve quality and retention of staff.

Trainers need to understand clients' existing skills and their needs in order to be credible; metropolitan trainers and providers coming into rural and remote areas often lack this understanding.

- Insecurity of the training market makes acquisition and retention of quality of teaching staff difficult in rural areas. Difficulties faced by trainers in remote locations are: isolation, professional loneliness, poor resources and facilities.

Issue seven: community sustainability, social capital and the value of vet to communities

Quality private providers who act in partnership with the local industries and community are responsive and so generate more effective outcomes in terms of relevant programs. They contribute to community sustainability. Rural and remote communities value the local presence of TAFE campuses as a type of 'social capital' which contributes to the sustainability of the community in the form of population and infrastructure.

It is likely that the lower educational and skill base in rural and remote Australia means the marginal impact of vocational education and training programs is greater than in metropolitan areas.

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Teaching and learning needs: Moving between practice & policy in VET

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This paper analyses educational forces in TAFE in relation to curriculum issues linked to wider social and cultural contexts arising from an ANTA-funded project into the teaching and learning needs of special interest groups. In particular. this paper attempts to explain the educational processes in TAFE and motivations for changing teaching and learning strategies to more effectively meet the needs of special groups. The aim is to present a synthesis of student and teacher perspectives that provides a basis for moving between practice and policy in VET.

In our tender to the ANTA Research Advisory Council, the project team outlined a number of strategies to be adopted in order to achieve its aim to identify the teaching and learning needs of special interest groups. One objective was to assist in the formulation of strategies for further development of appropriate curriculum for VET in Australia in a way that assisted closer alignment between teaching practice and preferred learning styles. The course areas studied were Carpentry' and Joinery, Child Care, Tourism and Hospitality. and Business Studies.

Research background

The research was asked to focus on the extent of the relationship, if any, between teaching and learning within VET related to age and socioeconomic status factors. The methodology', enabled the team to seek insights into the impact of these variables upon preferred learning styles as well as into their impact on student responses to a variety of pedagogical practices.

The project followed a multi-method approach which sought depth and breadth of data sources in order to construct, through participant-document-investigator triangulation, as full a picture as possible within the limitations and constraints of the project. Due to site limitations, formal and informal interviews were the dominant research techniques though document collection and observation provided data for validity checks ~ hen analysing the interviews.

Through this approach the team sought to ascertain the level of congruence between curriculum intentions and students' experience within and across four different VET areas. It also aimed to provide an illustration of the extent to which reforming curriculum design was favoured 'in-house' and/or deemed necessary.

This comparative analysis followed a number of phases. The project began by establishing a platform for the project and a clarification 0.' definitions, concepts and research intentions. Phase 2 included an evaluation of the teaching learning processes. Phase 3 involved a series of site-visits and a series of focus group interviews with urban and rural participants. Phase 4 was a concentration of data and analysis into the final report under the guidance of an advisory committee.

The purpose of a comparative analysis of the teaching-learning needs of special groups was to identify weaknesses to be remedied, to identity strengths and achievements which might be disseminated to others, and to facilitate the formulation of strategies for further development. This was an interactive process, however, these concepts are problematic and are not objective entities which exist outside the act of participation in TAFE and the project itself.

Therefore, this research did not set out to find a universal truth or 'one best way' conclusion but, rather, to elicit a position of agreement as to the purposes of the teaching and learning in TAFE and how to make sense of what is being achieved as the basis for further purposive action based on informed consensus, democratic principles and ethical considerations. The aims of the project were to document the social characteristics of students in selected VET area, especially the patterns of aged and socioeconomic status; to study their learning experiences and needs, and to investigate the suitability of the styles of teaching made available to them.

Since the project required the use of both system data and close-focus fieldwork, it needed to be centred on one system (given the scale of funding). NSW TAFE has a data base on over 400,000 students that is able to extract a social profile and course profile for each of the four student course groups. Therefore, we selected NSW TAFE, with a contrasting set of data collected in Victoria to diversify the data and to check the applicability of the findings to another system/state.

With the foci of the study set by ANTA as the differences of age and socioeconomic status, we defined this as including Aboriginal and Torres Strait Islander people, immigrant groups, people living in rural areas, unemployed people or people with low literacy levels. The student-college profiles were developed from statistics collected at enrolment b\ NSW TAFE. Initially, we asked for a profile on TAFE enrolments data for the industry groups noted above, the profile to include: employment status, age, gender, Aboriginality, language spoken at home, disability, country of birth and residence (urban/rural/isolated).

The project recognised the importance of the multi-site nature of the VET sector and attempted to respond to the complexity of the project's intentions and practices given the diversity of urban and rural research contexts. Unfortunately, we were not able to look at workplace learning. The task set for us had the potential for finding different outcomes for each setting because, by definition, we were researching identifiable differences that enabled site selection. However, the research process enabled us to estimate to what extent the different TAFE site profiles were statistically relevant but in practice mainly superficial.

The protocol established by the project team was that letters of introduction relating to each Institute-College-Course were developed through the NSW TAFE team and disseminated through the University of Sydney team. This protocol was intended to recognise the levels of management responsibility from the Centre down and to ensure that site-level visits were foreshadowed in a way that would allow efficient and friendly contact.

Interviews were conducted to develop background data and understandings of the project as well as a source for quotation. Each set of more than 150 responses was recorded through TAFE-recording (when permitted) and fieldnotes were made, where required, copying down direct quotations and observations and asking the interviewee to confirm accuracy. The team took care to approach each interview with sensitivity to the participant's position and to controversial aspects of some of the topics covered.

Curriculum

In reporting on a case study of teaching-learning practices in TAFE, this paper is concerned with practical aspects of the curriculum based on interview data with TAFE teachers and students, especially those students perceived to have special needs. Institutions such as TAFE, and the cultures of those institutions, clearly express social relations that are marked by cause and effect (Crump, 1992). Change is investigated in this paper in the context of systemic changes as well as changes at college and/or course level.

This paper presents a view that knowledge, and changes in what counts as 'validated knowledge', comes from seeking solutions to practical problems. This process is marked by changes in the learner and teacher that provide scope for other types of change. The problem for TAFE is its historic function of transmission of essentially industry 'validated knowledge.

If this interpretation of the historic function of TAFE is accepted, the question becomes 'Does curriculum in TAFE change what counts as valid knowledge or at best generate new pedagogic forms?'. The answer to this question rests with equitable and effective local level participation in curriculum development and practice. The jargon we applied to this is 'co-production'.

Curriculum studies began, according to Pinar and Grumet (1981, 20), in Denver in the 1920s when a teacher was hired by the local district superintendent to oversee the curriculum (as discrete subjects) in specific schools and across an administrative district. Eighty years later there are still misunderstandings about processes of curriculum development and practice. Narrow definitions of 'curriculum' contain a list of subjects while broader definitions contain just about everything that happens in a course or class including teaching methods, purposes, classroom organisation and subject/course content. The history of curriculum development has thus been a history of shifting descriptions and analyses of what a curriculum might be.

This diversity has significant implications for research which intends to focus on processes of curriculum formation and change in TAFE. We hypothesised that it was quite likely that there would be an intriguing diversity of views within and between the courses that became our case studies, due in part to the changes in curriculum thinking and practices occurring in the VET sector in the 1990s as well as to the diversity of professional and workplace backgrounds of the teaching staff and to their current teaching location. We predicted also similar uncertainty about terms 'curriculum decision-making' and 'curriculum autonomy.

Our view was that the context, power relations and group interests surrounding the development of each course encloses definitions within varying perspectives making it most unlikely that there could be agreement on one definition of 'curriculum'. It was important that we attempted to establish what descriptions of 'curriculum' were implied in college/course documents allied to what participants told us through interviewing. This was not an easy task.

We predicted that what might be needed for a more coherent description of curricular processes in TAFE contexts is an understanding about the close relationship between teacher-student practices and curriculum practices. This point was taken further through a cultural approach which sought and analysed the influence of complex variables, such as ethnicity, gender, social class and age, on the problem and solution repertoires of teacher and student cultures in mixed socioeconomic urban and rural TAFE colleges.

This analysis implied that the construction of the curriculum rested on the interpersonal understanding between teachers and students if the curriculum is to be practically effective, an understanding which becomes the basis for practical curricular coherence. Our view was that curriculum is constructed in practice out of the knowledge and experience of those who participate in the educational process.

Teaching & learning

Teaching and Learning processes are complex and varied. Our analysis of teaching practice reflected attempts to make curriculum relevant to the varying needs and interests of learners in a way that affirms the public purpose of TAFE. However, within any one course, classroom or even educational site, the extent of these accommodations were significantly different.

Core learning processes, as defined by Malcolm Skilbeck in 1980, involve learning and thinking techniques, ways of organising knowledge, dispositions and values, skills or abilities, forms of expression, workshops and practical performance, as well as interpersonal and groups relationships. These processes were linked by Skilbeck to a 'core curriculum' which is remarkable for its similarities to the Mayer Key Competencies of the 1990s. This account of core learning processes was - and remains - a challenge to the traditional conceptualisation of teaching and learning as a teacher focused activity centred on a body of knowledge involving a passive "demonstration" of what is to be learnt in order to be assessed.

Teacher-directed strategies have been the dominant pedagogy in TAFE as elsewhere because of the privileged professional position of teachers as well as the continuing tight correlation between teaching method and classroom control. Strategies such as rote learning, drill, lecture/exposition, demonstration and note-taking are all based on a theory of knowledge that we see as problematic and contestable. Yet these teaching practices continue to be seen as effective because they structure learning in a way that drives readily identifiable "results". One teacher told us:

> Examinations provide a reference to each student's level of ability. I use exam results as a confirmation on teaching feedback but I a/so take into account factors that 'night have affected outcomes. [Urban. Dis., OAFS, Female, FT casual, Teacher]

Even when teaching and learning shifts into simulation, structured group work, guided discovery, cooperative group learning and interest-based research, the authority for what counts as knowledge is validated by the teacher; a process confirmed by the assessment of individual performance. One teacher told us:

> You 've got to buy enough time in the syllabus to be able to do other things that relate to them because you've got to make time to find out how they're doing, whether they're looking to get a job, what they want to do. You get into their heads and find out what they wan!. [Urban Dis., C&J, Male, FT teacher]

More recently, notions of flexible delivery, team-based learning, problem-based learning and structured reflection, have pushed the teaching-learning process into a reciprocal exchange between knower and learner in a way that has the potential to better meet the needs and interests of all participants:

> We use a lot of disco very learning with tile guys, just letting them take on a project and they'll come up with the problems and solve their own problems. [Rural, C&J, male FT teacher]

Very recent developments in hypertext links and Internet resources have shifted the pendulum almost across to the antithesis of traditional methods in that the teacher has little intellectual authority, may not be present, cannot possibly match the knowledge base available and is not in the same position to assess performance. Yet much multi-media material remains a task-oriented tutorial and has not exploited this shift.

The shift noted above is a consequence of the shift from a content to a process view of curriculum. A process view is oriented toward the need of an employment-career level, has a technical knowledge base concerned with how to control or influence 'content' and is an orientation that becomes more essential following the increased learning and employment status of individuals.

What this makes clear is that epistemological procedures can lead directly to curricular policies which openly challenge the "spectator theory' of knowledge by making the knower an actor: someone who discusses, moves about, experiments and so on according to their levels of experience, perceptions of relevance and preferred learning styles. From our perspective, this is especially important when considering teaching-learning processes for poor, minority and otherwise vulnerable young people.

Policy

TAFE policies on teaching are dealt with at one level in NSW through the TAFE Commission Gazette issued under the authority of the NSW Minister for Education and Training. These policies include support for competency-based assessment, for example. Further details are available in booklets such as "TAFE NSW: How it works" (1995) and, of course, through specific course curriculum documents. This is what is known as 'desktop policy':

> I get a very basic curriculum outline, a few lines per lesson, 'with outcomes to refer to, but have great flexibility to develop curriculum. I need to stick to what's there [hi the document because of accountability but have total independence regarding the 'ways I teach'. There is trust in my professional judgment. [Urban Dis., CCS, Female PT teacher]

However, this teachers' students viewed this experience another way. One student expressed the impact of 'hidden policy' in the curriculum:

> There is a set curriculum and we have no say in the content and how we are taught. Sometimes we are asked what we would like to be taught but for that subject [Personal Skills]8 hours] we already knew it! [Urban, Dis., CCS, Female, 21 years]

Overall, TAFE teachers' classroom practices are shaped by a range of TAFE policy production. At present, competency-based training and assessment have a high profile and we asked questions about this to all interviewees.

Other influences stem from interaction with "quality" practices which seek, in part, to improve the information provided to students about coursework and completion requirements. The Australian Standards Framework and the Australian Qualifications Framework also play a significant part in shaping classroom practices through legislated policy.

The syllabus format in TAFE sets out course outcomes, module purposes and learning outcomes and also contain assessment criteria, learning and assessment, assessment methods, assessment strategies and resources and activities. One teacher saw the syllabus as operating in the following way:

> Our syllabus is laid out as a step-by-step demonstration-practical-demonstration cycle. When they achieve this we move on to the next lot. Some recipes are very old and need to be changed and there have been changes to practical hours (cut from 6 to 5) but the content has not been adjusted. [Urban, Dis, CC3, Male FT teacher]

There is a dysfunction here between policy text and policy practice. In a competency-based training and assessment framework, the intention of different teaching and learning strategies is that they be 'learner-driven' and provide scope for more flexibility to meet preferred learning styles than when teaching remains teacher-driven. In one situation [Urban Dis. CC3] the course dropped grading for a new pass/fail scheme but reintroduced grades to enable judgments to be made for the annual awards and prize night! This is a classic example of recontextualisation of policy.

There is also a policy intention to open up access to learning in a way that should enhance equality of outcomes for special needs groups through providing recognition of prior learning, catering for differences in students' learning styles, increasing student choice of course content, varying time and place of learning, providing flexible entry and exit points, and increasing flexibility of assessment.

TAFE has been wise to focus on teaching methods to improve the quality of teaching and learning rather than ask teachers to take on the responsibility of at tempting to identify vaguely defined individual differences on the basis of incomplete research and incoherent theoretical concepts. The latter is dangerous ground especially when seeking to assist people already with special educational needs. But there remains a gap between macro-meso-micro policy which Will not be fully bridged without a better understanding and application of policy processes.

Findings

While it is accepted that education plays a crucial role in both offering opportunities for individual social mobility and yet legitimates large-scale socioeconomic inequality, the match between teaching-learning processes and the needs of special groups has not been realised in a systemic manner for education and training in Australia.

One rationale for TAFE is that investing in individual skill development will provide a sound pool of workers who, however self-fulfilled (or not), ultimately sense the economic needs of the state and corporations as human capital. The history of TAFE has been one of individual advancement through status and income - historically for the "working class" - but we needed to ask to what extent the intended outcome of recent curriculum reforms remained enhanced economic production rather than pedagogical efficacy and personal and group achievement.

Ultimately, then, a close match between teaching and learning and the needs of special groups has the potential to address issues of social justice and equity in a profound and essentially more democratic context. The changing relations between curriculum and pedagogy that can emerge from what has been described above has entailed a redefinition of what students and teachers consider valid and valuable knowledge.

We concluded that this should have a positive impact on the nature of teaching and learning interactions when these are based on a dual experience of intrinsic and extrinsic motivation; an experience engendered through recognition of the needs of special groups, negotiation of the curriculum and the practice of appropriate pedagogy. Cultural perspectives, socioeconomic status, age, gender, class and race shape student responses to various teaching methods that help one define the preferred learning styles of special needs groups so that learning takes on a whole rather than divided meaning for participants.

We argue that, in TAFE, the keys to employing preferred learning styles are social class and culture as this framework allows for an analysis that groups together people from different socioeconomic variables as indeed groups are found in many TAFE courses. It was difficult to judge to what extent the identification of the more academic courses [Office Administration and Financial Skills and Commercial Cookery] as essentially lower middle class, and the other courses [Carpentry and Joinery and Child Care Studies] as working class, was a reflection of the social divisions and occupational hierarchies related to employment expectations in local communities rather than that of the course participant - or, whether the relationship was between class and location of the TAFE college rather than between student and course.

There is also the problem of promoting desirable change in students' perspectives (possibly solved by addressing the perceived and real problems of students in a way that is compatible with the responsibilities and problems of teachers). This can be assisted by a coherent curriculum reflecting genuine elements of co-production. As such, there is a need to build upon the knowledge embedded in each perspective (teacher or student). It is an assumption of a coherent curriculum that knowledge is distributed across cultures.

The trick is to locate the points where different cultural knowledge converge for building a coherent curriculum. This should help build a curriculum which incorporates what teachers can learn about the special needs and problems of their students. In developing co-production, teachers need to understand just how a student's repertoire of learning styles function in practice and how a student generates particular strategies to learn.

Conclusions

This project sought to review, assess and revise concepts and practices related to curriculum in a TAFE context. Our formal, and informal field testing has revealed complex, dynamic, iterative and profoundly challenging educational settings in TAFE colleges and courses. One of the most difficult tasks facing TAFE curriculum renewal will be getting students to ask the right questions about their own learning. Teacher interventions need to be focused on the needs of individuals and groups and to adjust assessment and reporting procedures to establish personal success as well as measure potential workplace performance.

While TAFE students are reasonably satisfied with their educational experience, there are gaps and inconsistencies in curriculum practice that suggest a closer relationship between teachers and students in coursework decision-making should reduce tensions between skills/training and learning. Outcomes/competency-based practices were valued and supported by teachers and students but proffered limited experiences of a more general and cultural importance. Students' formal and informal knowledge remains one of the primary interaction sets in a classroom and exist outside notions of human capital in TAFE.

Whether teachers and students do make real decisions about the content CC curricula was at the core of our investigation into preferred learning styles. The focus of this question during the project turned to whether teachers and students should make this type of decision. A teacher's professional development can be strongly promoted through shared decision on-making in TAFE as curriculum decisions make possible an integration of theory' and practice:, that can change the conduct of teachers and students towards a more conscious and self-critical curriculum planning.

TAFE teachers, despite experience in an educational system committed ~ change, feel that the role of the teacher is as a modifier or adaptor of curricula developed by experts' rather than an initiator role. The existence of these teacher cultures in TAFE held significant implications for the problem-solving practices observed, recorded and analysed and gave -- certain imprimaturs to the processes of curriculum formation and change. These processes help explain the differences identified between 'horizon' and 'headline' policy.

Reform might merely serve to enhance teacher control over curriculum ~lection at the further expense of their students. It might also shift the blame for social problem even more directly onto individual colleges, and individuals within courses, rather than be ~ as problems of the total system or of society as a whole. In any case, curriculum development never occurs in isolation but gathers in other aspects and issues in its development and implementation.

We have argued that curricular diversity, in its relation to participation. Equity and quality is a basic touchstone value for TAFE to extend. The need is for the education profession to be able to take a lead in working with students to construct the options which are relevant to their purposes within the constraints of equity and the common good.

There are logical and coherent factors at work in curriculum in TAFE that can enhance communication and learning. These factors should reflect the learning of students and teachers in a way that is fundamentally connected to the learning of the organisation in which they work and study. In this context, the reconstruction of teachers' work in TAFE- need not express conditions of intensification and disempowerment.

While structural factors will continue to dominate curriculum work i~ TAFE, emphasising difference, the contingent and the local offers a sound and powerful means for moving policy from the centre, through institutes and colleges, into courses and classrooms. In this way, the culture of teachers' work can change towards increased autonomy and progressive pedagogy rather than towards stress, demotivation and alienation.

An educational system which, within the constraints we have set, support the purposes and problem solving of teachers and students in general is a system which provides relevant options, including a propensity towards educational diversity, exploration experimentation and achievement. We feel that our data suggests that TAFE is heading in the right direction with curriculum but in a way that is not sufficiently yet coordinated or communicated.

Finally, an educational system which supports the particular purposes and problem solving of particular sets of students (as defined by their purposes, problems and constraint structures) is a system which provides option sets relevant to their purposes, problem solving and constraint structures. This is especially important for special needs groups. This is sufficient justification for changing policy outcomes in teaching and learning in TAFE.

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VET research through partnerships with stakeholders

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A partnership approach to research was incorporated into the 1996 ANTARAC project *Exploring Partnerships and Practices in the Delivery of VET Courses in Rural and Remote Aboriginal Communities* (Henry et al 1998). The concept of partnerships resonated through this project at two levels: as a focus for inquiry and as an organising theme for the conduct of the research work itself. This paper is concerned about the latter.

The project investigated the partnerships in the delivery of VET courses at six Aboriginal community sites or regions in the Northern Territory of Australia. The identification of stakeholders in the conduct of the research was in turn determined by the specific VET courses selected as vehicles for the research. In general terms then, the stakeholders were the Aboriginal communities of rural and remote Australia, the training providers, the training authorities and the research sponsors. For this project, the stakeholders were the Aboriginal communities of the Northern Territory where the six VET courses were being delivered, Batchelor College, Northern Territory University, and the Aboriginal Development Unit as the course providers, and the Northern Territory Employment and Training Authority and the Australian National Training Authority as both authorities and sponsors of the research.

These stakeholders were built into the research process at several levels. These levels reflected the management of the project, the conduct of the primary research and the concluding analysis and recommendatory phase of the research.

The project had been instigated by a project executive representing two of the training providers and the local training authority: Batchelor College, Northern Territory University, and the Northern Territory Employment and Training Authority. As a first step in implementing the project after funding had been secured the project executive established a project steering committee more representative of stakeholders and reflecting the Aboriginal/non-Aboriginal dimension of the research field. This steering committee became the driving management body for the project.

Research framework

The project employed a case study methodology for the primary research as the steering committee wanted an understanding of the processes which constituted partnerships in VET course delivery. This methodology enabled researchers to work closely with study participants bringing to life the complexities of education and training in situations where factors such as cultural differences, isolation and climate must be taken into account.

The steering committee developed the following research framework: case study researchers would work in teams. Each team would be constituted by an Aboriginal and a non-Aboriginal co-researcher; these teams would be connected to the steering committee through a series of workshops held over the life of the project; and the workshops would be based on action research principles. Through this framework the case study researchers would have the benefit of the support, advice and experience of the steering committee members and, in return, the steering committee would be informed and integrated into the research through dialogue with the case study researchers.

The case study researchers were chosen because they were both known to the communities in which their selected VET course was being delivered and informed, if not familiar with the course. Also, very importantly, the communities perceived the researchers to be appropriate persons for the case study research. In addition, the case study researchers were either associated with the training provider stakeholders or well known to them. This was advantageous to the study for each researcher to have already established relationships with the communities and the training providers involved in the research. This approach was both culturally and methodologically appropriate: methodologically, in that prior knowledge and relationships allowed researchers to delve more deeply into the 'layers' of knowledge available to them in the given research time frame, and outcomes of the research could be more readily advocated within the training organisations and communities through continuing association between the researchers and the stakeholders beyond the life of the project.

Three workshops were conducted during the research period. In the initial workshop the steering committee members were conscious of their commitment to partnership, although in this workshop they believed that they would provide much of the direction. It was important that the case study researchers shared a common research framework and had a common understanding of particular terms and foci. During the two day workshop a research framework was established which provided a checklist of elements emanating from the objectives of the study as specified in the funded project brief. The checklist was intended to be a supportive document, not a constraining one. Although each of the case studies would be undertaken as a discrete research activity, this was not seen to preclude making generalisations based on the collective story of the assembled case studies.

A second workshop was conducted after the case studies had begun. As the case study researchers reported on their progress a number of common themes emerged. These were discussed and analysed by the group. The workshop provided a forum for researchers to check their progress and processes, undergo peer review and to identify what further issues might need to be foregrounded before moving back into the field.

This participative and action based approach to the research continued at the third and final two day residential workshop. At this forum, the steering committee and the research team members were again present. Informants representing stakeholders from the case study sites were also invited to participate. Case study researchers submitted draft versions of their reports which were circulated to all the participants beforehand. The focus of the two days was to interrogate the case studies as to how specific research objectives had been met and to assist the final writing up of the case studies. Attention was also focused on the emerging general themes from across the case studies and to discuss how these could be addressed in the final research report. Again information was checked with stakeholder representatives who were present. Case study researchers then took the completed draft case studies back to the participating communities for review and approval and, if need be, further amendment.

The steering committee then took the six case studies as the evidentiary base for writing an accompanying synthesis document addressing the general themes arising from the research, developing an argument for changes in policies and practices in the delivery of VET courses to rural and remote Aboriginal communities, and concluding with recommendations supported by the research. This synthesis was written by selected members of the steering committee with early drafts circulated amongst other steering committee members and the case study researchers for comment. The documentary outcomes of the research project were two volumes: volume one being the synthesis report which included a general orienting introduction to the project as well as the generalisations supported by the case studies; and volume two being a compilation report containing each of the six case studies.

This project is presented here as an example of how VET research may be conducted with a commitment to engage the stakeholders with an established interest in the research topic in the research project at the levels of project management, inquiry processes and procedures, and reporting. We believe that this approach for establishing partnerships in research has much to offer research in VET and for the improvement of VET practices through the application of such research. In this respect we note Chris Robinson's (1997) call for both a program of high quality research in VET and for that research to be of real benefit to all stakeholders in the VET sector - employers and businesses, TAFE institutions and other training providers, and trainers and teachers. "Making VET research count means having a research program that is diverse enough to tackle the very different information needs of all those involved in VET" (Robinson 1997, p2).

The partnership approach to VET research being advanced in this paper is able to draw support from a number of sources in the wider context of social and educational research. Three such sources will be briefly considered here.

A comment on participatory research traditions in social science

The dominant position of positivism in sociological research, including research in the field of education, is no longer sustainable. Positivism has been critiqued as an unproblematic research methodology in sociology from research theorists advocating a much more reflexive social science. This critique has a long history in Europe (for example, the Institute of Social Research established in Germany in 1923), and emerged as a strong movement in English speaking countries including Australia from the 1970s.

With the notion of reflexive social science comes the central importance of studied self-reflection, the denial of the possibility of value-free science and the acceptance that valid knowledge cannot be somehow isolated from political interest (Agger 1991). This movement to reflexive social science has implications for the ways researchers undertake studies of the state, ideology, culture, discourse, social control, social movements and, let it be said, vocational education and training. From analyses of the shortcomings of positivism have come new theoretical perspectives in sociological research. These include critical theory, poststructuralism and postmodernism.

For the purposes of this paper, we want to make the point that these more recent theoretical contributions to developing understandings of contemporary social life provide cogent and substantive arguments to support interactive, collaborative and reflexive research enterprises in VET. Agger (1991) believes that it is possible to establish methodological links among critical theory, poststructuralism and postmodernism, leading to a "challenging of singular methodologies, whether quantitative or qualitative." He argues for

> multiple methodologies as well as multiple class, race and gender perspectives on problems (as) this has the additional advantage of empowering a variety of heretofore muted speakers to join discussions about social issues, legitimating their noncredentialed interventions into the scientific field and deprivileging the mainstream positivist voice (Agger 1991, p121).

Research through partnerships with stakeholders in the interest of the research can become a substantive and empirical research action informed by these theoretical ideas. Supporting the concept of a reflexive social science and the concept of research through partnerships are the research traditions developed around the action research movement in this country and elsewhere. Action research, as developed in Australia (Carr & Kemmis 1986, McTaggart 1991), has advocated participation of practitioners in the social field under study being intimately involved in the research process, collaboration amongst researchers and practitioners, blurring the distinction between researcher and practitioner, and valuing systematic self-reflection as central to the research process and the generation of new knowledge for social action.

Action research has provided links between research and professional development, and between research and processes of institutional change. It is of interest to note the emergence of action learning in the VET sector of Australia (National Staff Development Committee for VET 1995) associated with professional development projects. The derivative links between action learning and action research are obvious to those who pioneered action research in Australia from the late 1970s.

From these observations on developments in methodological perspectives in contemporary sociology, we can claim substantial theoretical support for VET research conducted through partnerships with stakeholders.

Recent debates on research ethics

There are developments in research ethics codes underway in Australia that are relevant to this discussion of research through partnerships with stakeholders. Considerable shifts have been made in the area of research involving Indigenous Australians and their communities. Centres and institutes of Indigenous Australian education and research located in universities around Australia have established research programs which address the ethics of research through partnership arrangements (Atkinson et al 1994, Batchelor College 1996). These research ethics policies bring to the fore the political interest of Aboriginal and Torres Strait Islanders and structure the research accordingly. For example, the preamble to the ethics policy of the Institute of Koorie Education, Deakin University includes this statement: "The Institute of Koorie Education is committed to research activities which advance the processes of empowerment and self-determination for Indigenous people" (Atkinson et al 1994, p1).

The procedures for the design and conduct of research projects bring together Indigenous people and researchers, whether Indigenous or not, into on-going sets of relationships as the projects unfold. These projects are participatory, collaborative, reflexive and structured through partnerships.

The Australian Association for Research in Education has begun a process of reviewing its code of ethics taking into account the broader concept of communities of interest which may not be well addressed or balanced under existing codes and some research practices. Blackmore & Lingard (1996), in a paper to a national forum of directors of research in education organised by the Australian Association for Research in Education, noted the occurrence of research through partnerships involving university researchers, industry, unions, and professional bodies. They also raised the issue of research funding agencies not appropriately recognising research conducted through partnerships with stakeholders with specific reference to action research (Blackmore & Lingard 1996, p4).

The shifts in research ethics procedures now occurring in some areas of research activity are creating new ways in which researchers are required to think about their practices and responsibilities, and how their research interests can more clearly coincide and complement the research and development interests of the other parties to the research. VET research is not immune from this pressure, nor should it be.

Strategic partnership with industry - research and training (SPIRT)

As a final observation relevant to the acceptance of research through partnerships with stakeholders, we have included a reference to the new Australian Research Council grant scheme, SPIRT. This scheme was introduced in 1998 to enable "universities in collaboration with industry organisations, commercial enterprises or public sector organisations to undertake research and research training in areas of common interest" (Australian Research Council 1997, p10).

The scheme requires universities and 'industry' to enter into formal partnerships to

- reflect the multi-dimensional relationship between higher education institutions and users of research in industry and commercial and public sector organisations where research and research training occur side by side;
- give universities and their collaborators greater flexibility to undertake research projects;
- allow for greater subtlety in the relationship between project collaborators (Australian Research Council 1997, p10).

This scheme will support, through partnership arrangements amongst stakeholders, research and development projects where the research focus is basic, applied or strategic. Opportunities exist here for VET research through strategic partnerships with industry, as it is defined in the DEETYA documents associated with the SPIRT scheme.

Conclusion

VET research in partnership with stakeholders has much to offer the sector as it establishes its own research culture. But within the substantive field of education and training, addressing the professional and social issues of concern and relevance through partnership-based research must be recognised as ushering in what will be for many a new era of VET research.

As indicated in this paper, research in partnership with stakeholders will require a prudent and thoughtful reappraisal of research ethics, protocols and methodologies on the part of the VET research community. As a way of promoting this reappraisal we draw your attention to the following short list of questions for promoting discussion.

The key questions of interest to the authors at this time are:

- does this approach to research adequately address ethical issues being raised by sections of the community with a history of *being* researched?
- what constraints do partners-in-research bring to the research enterprise, its directions and possibilities?
- how does partnership-based research relate to notions of pure (basic), applied and strategic research?
- how equitable can partners be within a research partnership, what does equity mean here, and who owns the intellectual property generated by the research?
- what does a constructive partnership which brings together both the interests of researchers and of stakeholders in the research look like?
- are there research training and professional development opportunities through more collaborative approaches to research in VET?

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Employers' perceptions of how well the VET system serves the training needs of their industry

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With an ever increasing focus on structuring the vocational education and training (VET) system to satisfy clients' needs and wants, it is imperative to clearly identify what is meant by 'client' and to glean information directly from 'clients' on how they think the VET system ought to be structured to best service their needs.

Inherent in the name 'vocational education and training' is the fact that the VET system serves the vocational training needs of the community. The most obviously identified clients of the VET system are the students themselves, of whom over three quarters undertake a VET course for vocational reasons (as revealed in the 1997 Graduate Destination Survey.) More specifically, over 40 per cent undertake vocational courses to either gain employment in the first instance, move to more satisfying employment, or gain a promotion.

Students will therefore express satisfaction with the VET system if these reasons for undertaking their VET studies are satisfied. However, these wants will, in turn, only be satisfied if employers' vocational training needs, or the needs of industry, are met. If the VET system supplies students with the skills and knowledge required by industry, then employers will in turn hire or promote these VET students.

Thus the student 'client' will be satisfied with the VET system if and only if employers and industry are satisfied that the VET system is supplying its students with skills and knowledge appropriate to industries' needs. Therefore, albeit more implicit, employers and industry should be considered the more influential 'client' of VET.

In recognition of this, employer satisfaction with VET is one of the Key Performance Measures of the VET sector and the national survey of employer satisfaction with VET the main means of gaining information directly from employers on their satisfaction with the VET system and what they see as the areas most in need of improvement. This survey was conducted in 1995 and again in 1997.

Historical consideration of industry needs

How far has the VET system traveled in six years? This is an interesting question on discovering historical government policy documents hidden away in a dark and dusty corner. As one example (among, no doubt, many more), it is interesting to note the *National Goals for Vocational Education and Training in Australia* put forth by the then Department of Employment, Education and Training (DEET) in 1992.

In July 1992, Mr Keating announced the establishment of a new VET system

> ... designed to deliver quality training that increases the capacity of Australian employers and employees to be creative, innovative and productive as well as being more responsive to the needs and priorities of industry across the nation. (DEET, 1992.)

Goal number four of the National Goals was *The Needs of Industry* which included the following objectives:

> strengthen industry's role in the development and provision of training
>
> improve consultative advisory arrangements and structures
>
> provide open and flexible vocational education and training opportunities to meet industry needs, particularly those arising from industry and award restructuring

make greater use of training infrastructure and expertise in industry

develop closer integration between on-the-job and off-the-job training

identify and address areas of skill shortages.

Industry views on a number of these topics, five years on, will be given below.

Methodology

The 1997 national survey of employer satisfaction with VET used computer assisted telephone interviewing (CATI) of in-scope employers, conducted in August and September 1997. In-scope employers were defined as those with an employee who had graduated from a VET course of at least 200 hours duration within two years before the survey. The survey sample was stratified by State and mainland Territories, size (by number of employees: small 1 to 19 employees; medium 20 to 99 employees; and large over 99 employees) of employing organisation, and by the 17 major ANZSIC industry divisions.

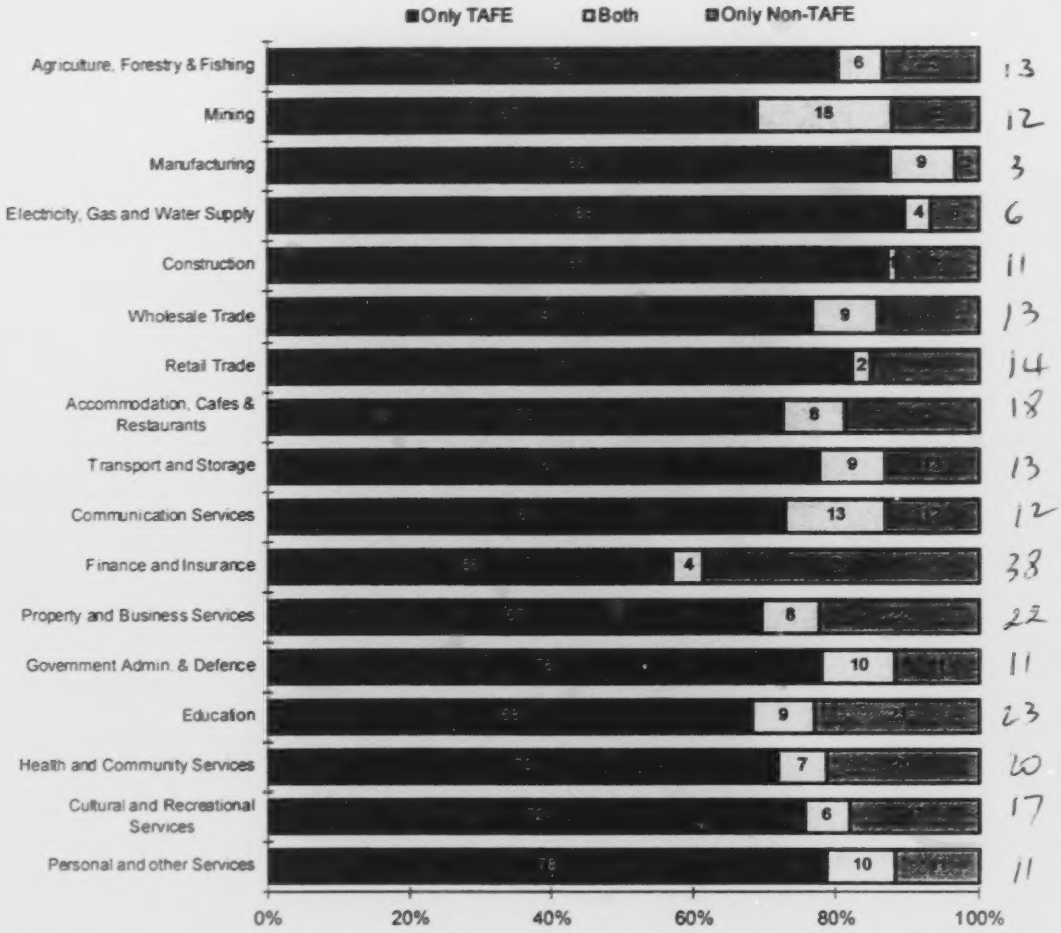
Interviews were conducted with human resource managers (or equivalent) in larger organisations and general managers (or equivalent) in smaller establishments.The questionnaire canvassed employers' perceptions of and satisfaction with a range of areas in VET including availability, relevance and quality. Development of the 1997 questionnaire included the conduct of focus groups with a range of employers in two States to refine key issues to be addressed in the questionnaire and to develop satisfaction and relative importance level descriptors for each of the key aspects of VET (availability, relevance and quality.) Two stages of pilot testing were also conducted before embarking on the main survey.

A total of 2 687 in-scope interviews were conducted. Of the total 76 860 employers contacted, the majority, 61.7 per cent, were out of scope while for 16.7 per cent, scope was unable to be determined due to refusals, lack of availability et cetera. Of those employers identified as being in-scope, 10.9 per cent were unable to be interviewed for similar reasons. Survey results were weighted to take into account the disproportionate sampling of establishments by size of organisation, State/Territory, and industry.

Employer profile

The four industry sectors with the greatest proportions of in-scope employers were retail trade (19.9 per cent), property and business services (13.1 per cent), health and community services (11.3 per cent) and agriculture, forestry and fishing (11.0 per cent.) Employers were catergorised by whether they used TAFE only, non-TAFE organisations only, or both for their training needs (see figure one.)

Figure 1. Employers' recent VET graduates, by provider type by industry



Overall, 80 per cent of employers indicated that they used TAFE only or mostly with the manufacturing; and electricity, gas and water supply industry sectors being the most likely to use TAFE. Employers who used non-TAFE organisations only accounted for 16 per cent with the finance and insurance; education; and property and business services industry sectors being the most likely to use non-TAFE organisations only (38, 23 and 22 per cent respectively.)

Use of TAFE or non-TAFE organisations also varied by size of organisation. Of employers from small organisations (one to 19 employees), 18 per cent claimed to use non-TAFE organisations only or mostly compared with 15 and 10 per cent from medium (20 to 99 employees) and large (over 99 employees) organisations respectively.

Overall employer satisfaction with the VET sector

Employers' rated their overall satisfaction with the VET sector on a scale of one to 10 representing 'very dissatisfied' to 'very satisfied.' Seventy eight per cent of employers indicated six or more on the scale as a measure of their satisfaction with VET yielding a mean score of 6.7. While this is clearly a positive result, indications are that there is also room for improvement.

Figure 2 shows the overall satisfaction scale mean scores by industry sectors. Mean scores ranged from a high of 7.0 for each of the education; government administration and defence; and construction industry sectors through to 6.5, 6.1 and 5.7 for the transport, storage; mining; and accommodation, cafes and restaurants industry sectors respectively.

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The mean scores for the three industry sectors with the greatest proportion of recent VET graduates (retail trade; property and business services; and health and community services as mentioned earlier) were all the same at the all industries mean of 6.7.

There was little difference in mean ratings between employer organisation size groups with medium and large size organisations averaging 6.7 compared with 6.6 for small organisations.

Employers' perceptions of service

Before revealing what employers' satisfaction levels were in relation to various aspects of VET, this section provides employer's rankings of what they consider to be the most important aspects of VET service. Employers were asked to rate the importance of a number of aspects of VET. These aspects, and the overall importance allocated to each of them, are given in figure three.

Figure 2. Employers' mean overall satisfaction score with VET providers by industry

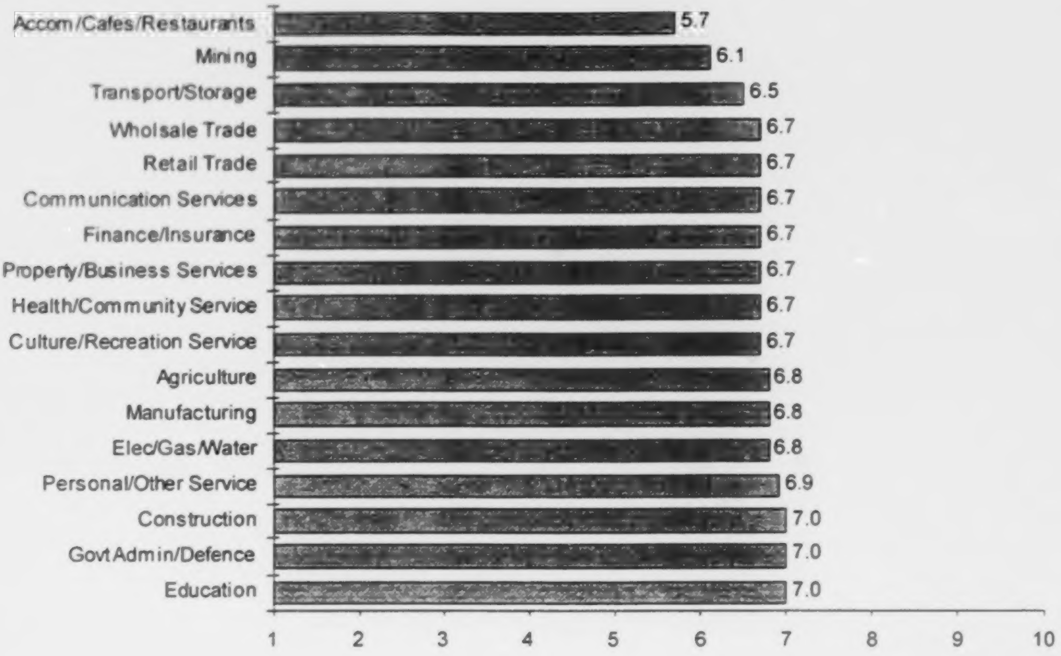
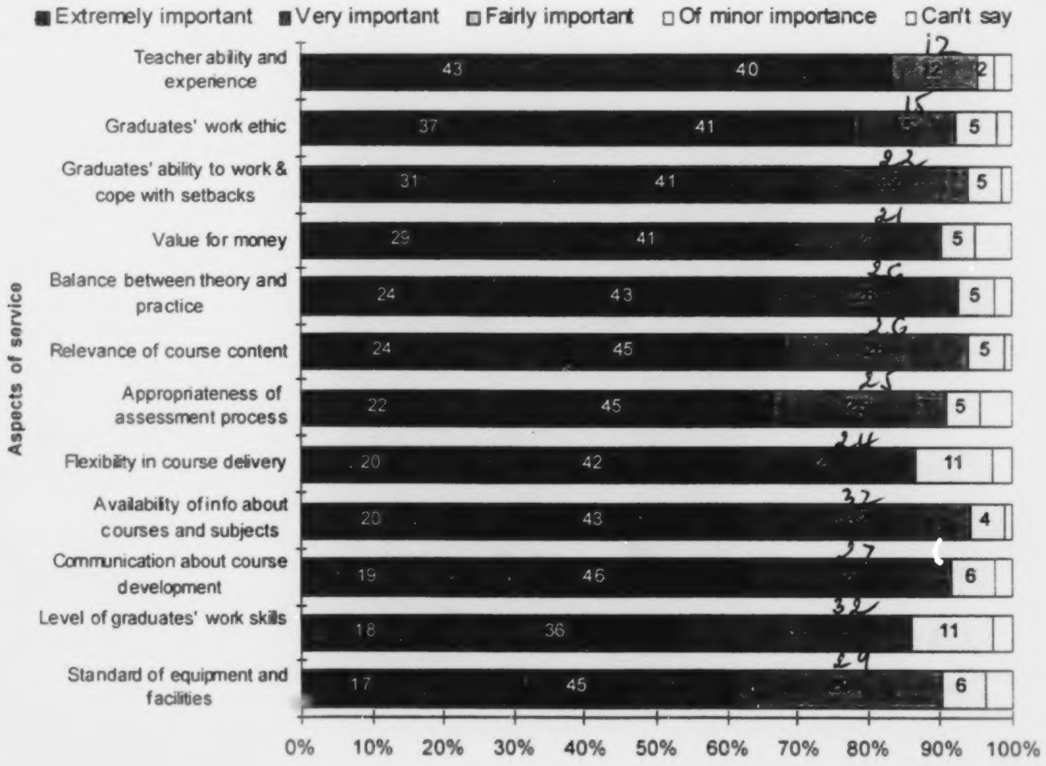


Figure 3. Employers' perceived importance of various aspects of service



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Teacher ability and experience was considered the most important aspect with 43 per cent of employers rating this aspect extremely important. This was followed by graduates' work ethic (37 per cent), graduates' ability to work and cope with setbacks (31 per cent), and value for money (29 per cent.) Balance between theory and practical; relevance of course content; and flexibility in course delivery; were each amongst the middle rankings of importance with 24, 24 and 20 per cent of employers rating these aspects as extremely important respectively.

It is of course debatable to what extent the VET sector should be responsible for providing graduates' work ethic or ability to work and cope with setbacks, or indeed whether such attributes could be instilled in VET students given their age at this stage. 'Give me a child up to the age of seven,' and the chances of lifelong possession of these attributes being instilled (or indoctrinated) into future VET students will be more likely.

Apart from these two aspects (and possibly the level of graduates' work skills, which depends to some extent on VET students' willingness to learn), the other aspects listed are within the domain of control of the VET system.

Employers' perceived priorities for improvement

Given the same aspects as above for ratings of importance, employers were asked to rate which aspects they perceived to be most in need of improvement. Graduates' work ethic and graduates' ability to work and cope with setbacks were again ranked in the top three aspects, first and third respectively (with 15 and 13 per cent of employers ranking these aspects as of highest priority for improvement respectively.)

While relevance of course content was only among the middle ranked aspect for importance, it was ranked second in priority for improvement (with 13 per cent of employers ranking it of highest importance for improvement.)

Fourth and fifth in ranking of highest priority for improvement were graduates' work skills and teacher ability and experience (with 12 and 10 per cent of employers ranking these aspects as highest priority for improvement respectively.)

While the above provides overall information on which service aspects where rated as having the highest priority for improvement by employers, differences occurred between industry categories. Table one provides which service aspect was most highly rated as being in need of improvement by industry sector.

Table 1: Highest rated service aspect for improvement by industry

Industry sector	Highest rated service aspect for improvement
Agriculture, Forestry and Fishing	Flexibility in course delivery
Mining	Graduates' work ethic
Manufacturing	Graduates' work ethic
Electricity, Gas and Water Supply	Level of graduates' work skills compared to non-graduates
Construction	Teacher ability and experience
Wholesale Trade	Graduates' ability to work and cope with setbacks without supervision
Retail Trade	Graduates' ability to work and cope with setbacks without supervision
Accommodation, Cafes and Restaurants	Graduates' ability to work and cope with setbacks without supervision
Transport and Storage	Graduates' work ethic
Communication Services	Graduates' work ethic
Finance and Insurance	Relevance of course content
Property and Business Services	Graduates' work ethic
Government Administration and Defence	Relevance of course content
Education	Relevance of course content

Health and Community Services	Graduates' work ethic
Cultural and Recreational Services	Teacher ability and experience
Personal and other Services	Level of graduates' work skills compared to non-graduates

'Graduates' work ethic' was rated the most in need of improvement by six out of the 17 industry sectors, followed by both 'graduates' ability to work and cope with setbacks without supervision' and 'Relevance of course content' in second place (three out of the 17 industry sectors each.)

Thus employers clearly see graduates' work ethic as the most important aspect in need of improvement. As suggested earlier, aspects relating to graduates' attitudes towards the world of work may be best dealt with in graduates' earlier years of development rather than at the age of participation in tertiary education. The aspect that could most readily be targeted for improvement is the relevance of course material. With improved communication and feedback structures between VET providers and industry, VET providers could be better informed as to whether or not they are providing courses relevant to industry needs and what changes are required to make courses more relevant.

Employers' satisfaction with key aspects of service

While the above section highlights which of the listed aspects of VET service employers' gave the highest priority for improvement, this section gives employers' current levels of satisfaction with those aspects they thought where most in need of improvement, namely, graduates' work ethic, graduates' ability to work and cope with setbacks without supervision, relevance of course content, and teacher ability and experience. Despite employers rating these aspects as most in need of improvement, results revealed that the majority of employers nevertheless considered these aspects to be provided at satisfactory levels.

For each service aspect, a list of four levels of service was developed through the conduct of focus group discussions with employers. These levels where then given to surveyed employers who were asked to select the level which most closely represented the level of service that they perceived they were receiving from the VET sector.

Regarding graduates' work ethic, 22 per cent of employers rated graduates' work ethic as 'are really involved in their work and always strive for excellence,' 48 per cent 'concentrate on their work and mostly focus on quality,' 25 per cent 'show some interest in their work and occasionally use some initiative,' and 2 per cent 'show almost no interest in their work' (and a further 3 per cent responded 'can't say.')

In relation to graduates' ability to work and cope with setbacks without supervision, 20 per cent rated graduates' abilities here as 'can work virtually unsupervised and are prepared to take ownership of the job and any problems,' 51 per cent 'need some supervision but generally cope well with most work problems,' 22 per cent 'need quite a lot of supervision but can cope with minor work problems,' and 3 per cent 'need virtually 100% supervision and cannot cope with even minor work problems' (and a further 4 per cent responded 'can't say.')

With respect to the relevance of course content, 8 per cent rated the relevance of courses as 'at the leading edge of industry needs,' 34 per cent 'directly relevant to the needs of industry,' 47 per cent 'mostly current and useable by the industry,' and 7 per cent 'not relevant to the industry's current needs' (and a further 4 per cent responded 'can't say.')

Considering teacher ability and experience, 16 per cent rated this aspect as 'complete teaching skills plus recent and relevant industry experience,' 46 per cent 'most teaching skills and some relevant industry experience,' 24 per cent 'some teaching ability but little industry experience,' and 2 per cent 'minimal teaching ability and no recent industry experience' (and a further 11 per cent responded 'can't say.')

Employers' suggested improvements for VET

Having covered what aspects of VET employers consider to be most important and which they consider to be most in need of improvement, this section provides information on responses they gave to the open-ended question 'As an employer, what suggestions would you make for improvements to the training system?' Responses to this question provide valuable feedback from employers, particularly due to being open-ended and not restricted to a predetermined list of aspects of VET service.

Eighty per cent of employers gave one or more suggestions for improvement which were coded into various areas of suggested improvement.

Overall, the most commonly suggested improvements related to the relevance of course content with 16 per cent suggesting training be made specific, relevant and focused to industry needs. As a separate item, 16 per cent of employers suggested greater provision of practical training, work experience, industry experience, and on-the-job training.

The third and fourth most mentioned improvements related to communication between employers and VET providers with 12 per cent suggesting more input into and feedback about courses be sought from employers, and ask employers what they want in courses et cetera. Seven per cent of employers suggested improved communication, contact with, and relationships between employers and VET providers.

The fifth most mentioned suggestion, being mentioned by seven per cent of employers, was for the VET system to be more flexible about timetables and class hours et cetera. As shown earlier, differences of opinion occur between the various industry sectors. Table 2 shows the improvement most often suggested by industry sector.

For eight of the 17 industry sectors, 'more practical training, work experience or on-the-job training' was the most suggested way for improving VET, while for six of the 17 industry sectors, making training specific, relevant and focused on industry needs was the most suggested way for improving VET. Outside these trends, the electricity, gas and water supply; and transport and storage industry sectors both most suggested seeking more input and feedback from industry on course content for improving VET. For the education sector, more flexibility regarding timetables was the most suggested means for improvement.

Table 2. Most suggested way for improvement by industry sector

Industry sector	Most suggested ways for improvement (open ended question)
Agriculture, Forestry and Fishing	Provide more practical training/more work experience/industry experience/on-the-job training
Mining	Training must be specific/relevant/focused to industry needs
Manufacturing	Training must be specific/relevant/focused to industry needs
Electricity, Gas and Water Supply	Seek more input/feedback from employers/industry/ask them what they want in courses
Construction	Provide more practical training/more work experience/industry experience/on-the-job training
Wholesale Trade	Provide more practical training/more work experience/industry experience/on-the-job training
Retail Trade	Provide more practical training/more work experience/industry experience/on-the-job training
Accommodation, Cafes and Restaurants	Provide more practical training/more work experience/industry experience/on-the-job training
Transport and Storage	Seek more input/feedback from employers/industry/ask them what they want in courses
Communication Services	Training must be specific/relevant/focused to industry needs
Finance and Insurance	Provide more practical training/more work experience/industry experience/on-the-job training

Property and Business Services	Training must be specific/relevant/focused to industry needs
Government Administration and Defence	Training must be specific/relevant/focused to industry needs
Education	More flexibility about timetables/hours
Health and Community Services	Provide more practical training/more work experience/industry experience/on-the-job training
Cultural and Recreational Services	Provide more practical training/more work experience/industry experience/on-the-job training
Personal and other Services	Training must be specific/relevant/focused to industry needs

Conclusion

Overall, the survey results show that the majority of employers are satisfied with the VET system, along with the majority from each employer organisational size category, and from each industry sector. The accommodation, cafes and restaurants; and mining industry sectors were revealed as the most dissatisfied with the VET system.

The main areas for improvement generally identified by employers were providing more practical and on-the-job training and experience, making course material more relevant to industry needs, increased industry input into course content, and greater flexibility in times courses are provided.

It is interesting in light of these survey discoveries to reflect on the following 'needs of industry' goal objectives promoted in 1992 (DEET, 1992, p.7): develop closer integration between on-the-job and off-the-job training, provide open and flexible vocational education and training opportunities to meet industry needs, and strengthen industry's role in the development and provision of training.

It is clear that the main areas of improvement in order to make industry more satisfied with the VET sector have been correctly identified for some time but that while these factors may be being addressed, they remain the areas in need of further improvement to further satisfy the needs of industry.

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Industry and academia: building networks and alliances

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The aim of this paper is to present my view of industry's position on academic research in industry, to provide a strategy for academics to develop constructive links between academia and industry, to explain how to develop these cooperative partnership between our respective groups and to suggest the most appropriate level within an organisation at which to make contact. This paper focuses mainly on university and TAFE research Programs with industry, but also has some relevance to work experience Students.

I'll draw on my twenty-five years experience in industry as a professional engineer and, more recently, as a training professional. I will refer to the experiences of colleagues within industry and contacts within academia as well as my experiences in academia working on my post graduate qualification in education.

The different 'ways of being'

Before industry and academia can effectively interact it is important for us both to understand that we each have our own language, culture and customs. If academia has the desire to perform research in industry it carries with it an obligation for academia to make the effort to learn, or at least to be aware of, the language, culture and custom of the relevent industry.

Industry is very focussed on the 'bottom line', on the here and now. It is self-defeating for an industry to set itself up to produce the very best widgets in the world in five years time if by doing so it goes out of business in the meantime. Industry wants action and it wants them now - quick trials, quick results, or at least quick indications of those pathways which look like they might produce positive results. We can then abandon those avenues which show little or no promise and move on. This varied approach to problem solving and experimentation is perhaps best known as the 'flavour of the month' syndrome.

Another popular method is the 'Pareto Principle' or the '80/20 rule' whereby we address 80% of the problem with 20% of the total effort, in order that we don't spend the other 80% effort in fixing the remaining 20% of the problem when the resources can be better invested fixing 80% of problems elsewhere. Of course there is a downside to this approach. Problems which are not completely fixed but have a small unresolved component left in place tend to recur at a later date at the most inconvenient time possible.

This is known as 'Murphy's Law' - the worst possible thing will happen at the worst possible time. Ideally we would like to have 'magic bullets' which kill off our problems with one shot, rather than go through the tedious and time consuming process of problem solving, since after all, time is money. Equally industry has different cultural norms from academia. Compared with academia we can be more relaxed in some areas, for example in our use of colourful language and more stringent in others, for example, in a strict adherence to safe work practices, in the wearing of protective equipment or restricted access to specific areas, and so on.

Academia on the other hand, appears to have access to more varied and less fixed ways of being. academia certainly has the rigorous, scientific approach to dealing with hypotheses or problems. Here time and money appear to play second fiddle to the more critical elements involved with the rigorous approach of the research question, the double blind trials and the need to produce repeatable and reproducible results. Equally, and on the other hand, academia can also demonstrate high levels of flexibility, both in research topic and in research methodology. There is the added bonus of serendipitous activities along the research path where a different, but more interesting quest is found. I believe it was in this way that penicillin was developed.

Differences can be the strength or weakness of an alliance

We are both specialists in our own areas, experts in our own fields. If we can share our levels of expertise we can gain synergistically from the partnership. Our very differences offer new perspectives and paradigms, give us new ways of looking at problems, new insights, new opportunities. However, having no shared or common goals can also be a problem. We need to understand each others communication styles because academia and industry communicate very differently. I recall submitting one assignment for my post graduate diploma in education in which I used the industrial method of presenting information using a report format with headings, sub-headings, tables, bullets, etc and was penalised for it. Not because the content was incorrect, but purely due to the style I used. In a similar vein I am obliged to write this paper in a the same academic format rather than in my preferred industrial style! If our intent is effective communication we need to know each other's styles first and focus on some point where common agreement and understanding is available.

Developing networks and strategic alliances

All of us develop networks as we move through life, society, and business. Perhaps there is not a lot of point in explaining how to do this as I imagine that we all do it, just to be aware that it happens, and although the specific industrial partner may not be able to assist with a particular research program there is the distinct possibility that the industrial partner may suggest other organisations who may be able to assist the researcher. I think that it is worth noting that even industries working within the same fields are not always in competition with each other. It is not unusual for us to share information of mutual benefit with our competitors, for example, information on occupational health and safety, environmental issues, workplace relationships, and so on. In some research areas an industrial partner may be able to readily introduce the researcher to a wider network of other organisations.

There are a number of ways to develop strategic alliances with industry that I am aware of. One major university in Melbourne sponsors a bi-annual conference for the Aluminium industry. Delegates come from around the world and as a consequence this university has successfully developed a wide range of contacts with a number of industries and organisations. Other academic institutions offer research Programs to industry provided that the industry assists in some financial way. KAAL has provided a number of these bursaries to different universities to fund research in various aspects of our many industrial processes.

Some industries run general education programs jointly with industry. For example, Portland Aluminium with the assistance of a number of academic institutions ran a speakers' circuit for the benefit of the Portland community. Additionally, academia is perfectly positioned to offer support to industry in the provision of vocational education and training and in the development of different strategies for skills transfer as a lot of industries are often not very good in these areas. We could perhaps evaluate each other's programs - a kind of a two way street where we both benefit. In a more administrative sense we could both look at having academics on local industry training committees and having industrialists on academic committees such as academic review panels, course content revciews and ITABS. We could have a sharing of thoughts and ideas by having industrialists as guest lecturers and having academics and teachers as guest lecturers or trainers in industry.

Some years ago our organisation commissioned the metallurgical department of a Victorian university to develop and present programs on the metallurgy of aluminium for our technical staff . We have also had a number of TAFE and secondary teachers seconded to our plant for various periods of time to participate in specific programs we were running, both of which were highly successful. At a later stage one TAFE lecturer was seconded to our plant for a number of months to participate in a comprehensive statistics program that our corporate body was running for all of its divisions worldwide. After several weeks attending the extensive course the lecturer stayed at our plant for a couple of months to run special classes in statistics before taking this new knowledge back into the TAFE system.

As we all know, there is no such thing as a free lunch. Academia has to bring benefits to the alliance to make the partnership worthwhile. And academia has a huge number of attributes to offer: high levels of expertise in a vast number of fields, rigorous research methods, consistently high standards, academic credibility, excellent research and development facilities, skilled tutors, student resources, worldwide network with other academic institutes to name but a few. Additionally academia can bring to an enterprise assistance with learning theories and alternative learning paradigms .

How to 'smooth the path' when building a strategic alliance

Firstly, be aware that a researcher even with funds and a valuable field in which to study is not always welcomed by industry with open arms. 'At no cost to industry' does not really mean what it says. There are some obvious and some not so obvious costs involved with fully funded research and academics need to be clear about them. Be clear and specific with your needs and expectations in terms of the various levels of support you may need during the program, for example: access to an office, computer, or photocopier; access to people. Who do you want to talk with, for how long, do you need to speak with some people more than once; access to equipment and processes. How long do you want, what do you want to do, who do you need to assist you, who pays for the defects produced during any trials you may wish to run? Similarly how much time do you estimate you will need?

Estimating costs is itself a science, or perhaps its an art all of its own. A rough rule of thumb I've learned over the years on estimating the duration of a program is to work out how long it would take if everything went well and according to plan. Take this amount of time, double it and then add a 10 to 20 % for contingencies! This method has worked well for me over the years, and even using it I still tend to underestimate rather than overestimate the amount of time I'll need to complete a task or program. Of course, there is a real risk that your best estimates may involve an extensive period of time which could easily dissuade a potential partner from starting the joint program in the first place. The temptation must be to underbid, but in doing so you risk losing your credibility.

Secondly, at this stage you need to be clear in what you are actually offering as there is scope for great misunderstanding. What specifically are the outcomes of your program and how will they assist the organisation you have involved? Are you providing trained researchers and/or students who can operate independently or who require some levels of supervision? Have you matched the researchers and students to the program? A colleague of mine 'hosted' a post graduate student whose role was to develop the framework of a program which was supposedly within the student's field of study and well within their capability. It did not turn out to be so as the student was incapable of the level of conceptual though required, much to their embarrassment and that of the lecturer and my colleague.

Thirdly, please specify the format of your final product - whether this will be a verbal report, hard copy or electronic version of a report, a page on an Internet website, a video, CD-ROM and so on. Finally, tell us whether a complimentary copy or two of the finished report is offered. I once hosted a research group, provided support and facilitated access to people and equipment only to be told that if I wanted a copy of the research findings I would have to purchase a copy of the paper! I doubt that I'll be working with that organisation again.

Fourthly, on in the area of logistics, be clear on who actually provides what. I am aware of one area of industrial research which was held up for half a day because the researcher did not bring a pair of safety boots and the organisation did not stock boots small enough to fit this particular person. Needless to say the research did not get off to a great start. So find out what basic protective equipment is required in the particular enterprise such as hard hat, safety glasses, boots, special clothing, and so on, and determine who is going to provide them. On a more mundane point, find out who provides Workcover, personal and any third party insurance. This may be a side issue until there is a real need, at which point it's often too late for action, leaving only recrimination, regret and an experience of learning through the school of hard knocks.

Fifth, there may also be a need for the enterprise to supervise both the researcher and tutor from a safety perspective, in addition to the level of academic supervision a researcher may require. We do not allow people who have not participated in a general workplace induction to even walk on our walkways unescorted let alone allow visitors access to the work areas themselves. To do this requires the visitor to work through a number of very thorough competency based safety programs, and even then we would be most reluctant to allow visitors with non-industrial backgrounds unescorted access within our plant.

Sixth, there may be specific requirements or restrictions from some industries. For example, visitors are not allowed to bring cameras onto our site as we have a number of proprietary pieces of equipment and processes. For obvious reasons you are not allowed to bring illicit drugs, alcohol, firearms, knives, or disposable cigarette lighters, neither are you allowed on site if you have a heart pacemaker as the powerful magnetic fields in the Potrooms interferes with their operation. This magnetic field can magnetise analogue watches and make them useless as well as scramble the data contained in the magnetic stripe on the back of your credit cards so both of these items are on the restricted list.

Finally, there is a need to discuss common understandings in areas such as the performance and behaviour standards expected from tutors, researchers and students. Another colleague had problems with students not calling in when they would not be at the plant as agreed, or not calling when they were late, or would miss a meeting. We have enough work to do without having searches for people we presume to be 'missing' in the plant somewhere who are, in fact, sitting at home or are back at their academic institute.

It may well be worthwhile to set up a memorandum of understanding or a written agreement with the host organisation to clarify all of the above points*before you start your program.* There should be no surprises on either side for the duration of the project. If the project actually involves working with proprietary processes or equipment, be prepared to sign a confidentiality agreement with your partner organisation.

Who to contact in an organisation

For a project or program to succeed, a number of requirements need to be met, including having a Program sponsor and change agent. A sponsor is a person who has the authority to approve the program and to remove blockages whenever they occur, whereas the change agent is the facilitator of the program, the person who actually brings all aspects together. For a program to succeed you need to have both. Ideally you need to make the initial contact with a potential sponsor, although an influential change agent could also recruit their own sponsor on your joint behalf. Do not make contact too high in the organisation. A researcher from a Western Australian university did this with a local organisation and her request was rejected, only to have a call one week later from an interested person from the same organisation though at a different level!

People too high up in the organisation can be too distant from the 'action' to appreciate what is being offered. And clearly some organisations do not reward risk taking, so the pioneering work is left to others to initiate, then if it is successful the individual can take up the project without the risk, and if it fails, the individual is remote from the failure. Equally important is not to make contact too low in the organisation either. A person at this level has no authority to act nor enough 'currency' to influence the decision makers in the organisation. So where do you actually make contact? If you already know someone in an organisation I suggest that you ask them for their advice, otherwise I suggest making contact at a middle level of the organisation, or perhaps contact the training department for their advice and assistance.

Conclusion

Finally, I would advise to start developing strategic alliances well in advance of your real need. In this way a lot of your ground work can be done ahead of time. Start with local businesses which have the potential to form a strategic alliance, and if you are not sure which organisation to work with perhaps AVETRA is a good place to start. Lobby your executive for assistance or just pick up your telephone and start dialling. After all the worst response you can have is for someone to decline your offer.

Evaluating the contribution of competency-based training: Perspectives from stakeholders

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Competency-based training (CBT) is now relatively well established within vocational education and training (VET) in Australia and an investigation of its contribution to VET is now underway. In this paper, we outline the main elements of a National Centre for Vocational Education Research funded project to evaluate the contribution of CBT. Based in the Department of Vocational Education and Training at the University of Melbourne, the project is examining the contribution that CBT has made to outcomes in VET in relation to a prepared brief. The quality and effectiveness of training in Australia depends, among other things, upon establishing the contribution that CBT has made to VET, specifically, the outcomes of programs based on industry standards. To what extent is CBT meeting the requirements of various stakeholders and contributing to the quality and flexibility of learning and working life? This paper presents the theoretical and methodological underpinnings of the evaluation by elaborating the perspectives used to frame it and the general analytical approach taken.

There is an increasing need for evaluative studies in VET (Harris 1996), including evaluations that go beyond investigating the implementation of CBT. The issue of what counts as the outcomes of competency-based training is central to the proposed research, as are the constructions of competence and competence training that inform programs in VET. Thus, the proposed evaluation draws attention to issues attendant upon both the design and implementation of CBT. For example, it is easily forgotten that standards are value driven and that a uniformity of standards may not prevail in CBT. It seeks to capture a broad range of contributions (practical, social, political, ethical) that CBT has made to VET by using multiple and different evaluative criteria. Using different evaluative criteria also increases the potential usefulness of the evaluation to its intended users and enhances its credibility, relevance and reliability. In line with other evaluation researchers (eg Harris 1996, Everitt 1996), we take it that the main purpose of evaluation is to *improve* projects rather than supply information for accountability. That is, we need to consider evaluation in the sense of a critical, reflective process, and not merely as a technical tool for accountability. To this end, the outcomes achieved by competency-based training need to be analysed from a number of different vantage points, including those of industry bodies, policymakers, providers and practitioners, and a number of different perspectives.

As VET researchers, who are also practitioner-educators, we too acknowledge a particular vantage point on CBT outcomes, influenced by the current social and historical context of VET provision and the debate on competency-based training both in Australia and overseas. Such a vantage point will inevitably shape perspectives brought to data gathering and analysis. No researchers can be 'objective' in recording the practices and views of others. We will, through actions observed, questions asked, concepts employed to frame answers, and in the form and substance of the research account, constitute the data and construct the research product. We each bring culturally-derived values to the study with potential effects upon its processes and outcomes. We therefore wish to be reflexive in our work as evaluators, foregrounding, at times, our situatedness as researchers and the implications of the theoretical frameworks and the discourses we employ (Usher & Edwards 1994, p153).

Framing research on competency-based training

In making a commitment to improve the contribution of CBT to outcomes in VET, we may need to explore the possibility of the requirement for a different content and organisation for competency training. The industry and standards based approach may well be inappropriate to the needs of particular industries and other users of competency training (eg providers, individual enterprises). Indeed, a recently commissioned Victorian Office of Training and Further Education report presents the view that approaches involving 'national industry competency standards and the introduction of Competency-Based Training (CBT) to secure those standards ... are fundamentally flawed in achieving skilfulness and adaptability in the workforce ... and being relevant to enterprises' (Billett et al 1997, p1). What we want to use CBT *for* decides, in part, the question of its appropriateness.

In evaluating the contribution of CBT to VET in Australia, reference will be made to the contexts and policy frameworks within which CBT operates. As Angela Everitt comments, ' ... to evaluate practice without taking account of the context of that practice and the policies which constrain it or provide opportunities for it, assumes that practice exists as a commodity on its own that may be separated out for study. It is an atheoretical approach which serves to depoliticize practice ... ' (Everitt 1996, p174).

Three perspectives for the possible improvement of VET in relation to CBT will be taken: a *technical* perspective where we seek to establish the ongoing effectiveness of CBT and its principal constituent features (competency standards); a *critical* perspective where we seek to establish the distributional effects of CBT, for example, whether CBT lends itself to the purposes of some client groups (industry, enterprises, individuals) and not others; a *socio-cultural* perspective where shared values and 'communities of practice' (Lave 1991) can be taken into account. Working these disparate perspectives together should produce understanding of the issues outlined in the project brief and provide a broad picture of the consequences for VET of the change to CBT.

Thus, evaluating CBT from a technical point of view will involve, among other things, gathering evidence on the degree to which CBT and its principal features are meeting the requirements of various stakeholders (eg industry, individual enterprises, employers/supervisors). Anecdotal evidence suggests that some industries and some organisations within these industries are struggling to implement national standards given the variability of types of work within these industries and conditions across states. Furthermore, other industries and organisations see little commercial advantage in these standards. Thus, a Business System Co-ordinator for the RACV reports: '[We] have implemented competence standards at a job level, rather than nationally. From a business perspective there are no advantages aligning the job standards to the national competence standards' (Written communication, October 1997).

Adopting a critical perspective will involve, among other things, gathering information on the advantage that may exist for training in companies operating in urban rather than rural and remote areas and the corporate environment rather than small and medium sized enterprises. It will also involve examining the suitability of using national standards for groups of trainees from different levels of an organisation, for example, trainees at operative level who commonly present with special language and literacy needs may require training programs unlike those of other workforce groups. Smith et al (1997), in examining the effects of CBT on teaching and learning, reported 'clear variations in the suitability of certain CBT features for different student groups'.

Adopting a socio-cultural perspective will involve, among other things, gathering information on how CBT and competency standards are playing out in different industries and enterprises. This could include investigating the degree to which what might be called the standard model of competency training obtains and the question of the existence of national competency standards, as opposed to say, regional, or enterprise, or individual standards. It will also involve examining the centrality of membership in a community of practice which some researchers (Billett 1994, 1996a; Brown1997, Tomassini 1997) suggest is pivotal for the development of vocational knowledge and skill. Competency-based training and competency standards are, *par excellence*, practices and practices are fundamentally social and cultural in character.

A relational analysis

The analytical approach which informs the framework above is based in emerging perspectives on the relational character of competence, learning and training (Engestrom 1994, Ellstrom 1997, O'Donnell & Garavan 1997, Heidegger 1997). This approach emphasises the *centrality of work processes* in evaluating the contribution of any model of training to the field of vocational education and training. It complements the analytical approaches taken by Australian researchers in the field of vocational skills development and workplace learning (Stevenson 1996, Billett 1993, 1994, 1996a, 1996b; Harris & Volet 1996a, 1996b) who tend to the view that workplace contexts constitute learning as a process that is integral to and in parallel with work. As Stephen Billett (1993) suggests, work becomes learning and learning becomes work. On this view, competence development is both the product and process of identifying strategies which enable workers to use their job experiences for learning.

There is an increasing interest internationally in comparative education and training, most particularly comparative research on skill formation in vocational education and training. With the introduction of the National Training Framework and associated industry-led initiatives (eg training packages), Australia appears to be moving away from an education-based VET system, toward the creation of a workplace-based model for skill formation. As Stephen Billett comments, 'Workplaces have been transformed from target settings for what is taught elsewhere, to become a preferred site for the development of vocational knowledge' (Billett 1996b, p2). It may be useful to review approaches to competence development being taken in countries that use a workplace-based model, for example, the firm-based German model for skill formation. Indeed, approaches to competence development in these countries are themselves under review.

Emerging approaches to competency training within a European context (Ellstrom 1997, O'Donnell and Garavan 1997, Heidegger 1997, Brown 1997, Tomassini 1997, Kuhn 1997, Attwell 1997b) are centred around work as an activity that requires individual workers to influence or shape their occupational identities, working conditions and work content, including the development and use of technology (Brown 1997, Heidegger 1997). 'The fundamental characteristic of current production processes in all sectors is that they are highly *dynamic and innovative*: they require working, learning and innovation to proceed in parallel' (Tomassini 1997, p2, emphasis in original).

In this 'new paradigm of training', vocational education and training is conceived as encouraging the improvement of work, its conditions and contents including the social relations of the workplace. The emphasis is on promoting the ability of workers to make such improvements through the competent use of knowledge and skill. Competence is defined as competence-in-use, that is, as 'neither primarily an attribute of the individual worker or the collective of workers), nor primarily an attribute of the job. Rather, the focus is on the interaction between the individual and the job, and on the competence that is actually used by the worker in performing the job (Ellstrom, 1997, p268).

As Ellstrom goes on to explain, 'The notion of competence-in-use is influenced partly by the competence that the worker brings into the job, and partly by the characteristics of the job. Thus, competence-in-use might be seen as a dynamic factor mediating between the potential capacity of the individual and the requirements of the job. This means, among other things, that both factors related to the individual and factors related to the job may facilitate or limit the extent to which the individual uses his or her actual competence' (Ellstrom, pp268-9). The concept of competence-in-use is less definitive than our 'standard' concept of competency which focuses on the formal or prescribed character of competence – consequently, our idiom of 'competencies'. It can be understood as a partial and relational concept. Competence is an outcome that is never fully realised, never really finished; it oscillates between the individual and the job.

The notion of competence-in-use goes hand in hand with another concept of a relational kind, *innovation in the workplace*, where innovation is understood to be socially organised. An orientation towards the social organisation of innovation gives attention to 'learning processes and pro-active behaviour by individual[s] or collective actors' (Ellstrom 1997, p266). In other words, it takes into account not just the needs of companies and employers, but also needs relating to the development of individual workers and of regional economies as well.

The dominant theme in emerging models of competence development is entry into a community of practice. That is, individuals are conceived 'as developing occupational identities that need to be related to particular socially situated, contextually embedded practice' (Brown 1997, pp5-6, citing Lave 1991). From this viewpoint, as Massimo Tommasini argues, '... the [competence education and training] problem is one of reviving and extending *apprenticeship* in all its possible forms. [...] It is the state of apprenticeship which allows young people to follow effectively the centripetal path of *legitimate peripheral participation* and develop thought processes consistent with the context and with typical expert skills' (Tomassini 1997, p10, emphasis in original). Grounded in a change-oriented view of competence, these models are essentially dynamic and developmental. They seek to capture a notion of expertise which is based on knowledge of work processes, rather than occupations, jobs or tasks. The development of expertise in work process knowledge goes hand in hand with the ability to shape working organisation, and technology, and skills, in order to develop social innovation.

More broadly, a relational analysis involves tracing the various actions and interactions which link to form an outcome, for example, the contribution that CBT can be claimed to have made to vocational education and training. Thus, competency training might be thought to be the product of various actions and interactions which link and form dependencies, for example, between a market orientation in education and training, a managerial model of governing education and training and the convergence of general and vocational education (Rushbrook et al 1996, p129). Relationally-resonant concepts like competence-in-use, innovation in the workplace, work process knowledge, social shaping of work, situated practice (situated learning; situated cognition), community of practice and culture of practice have become increasingly prominent in various theoretical orientations that are being used to inform understandings of competence formation and competency training. These orientations include constructivist approaches to knowledge and skill formation, as used, for example, in Yrjo Engestrom's (1994) theory of 'investigative learning and work practice', as well as poststructuralist positions on knowledge and power such as deconstruction, discourse analysis, and the like.

These concepts form a promising assemblage of ideas for studying human competence, organisation, technology, and work, and pursuing investigations of practice of various kinds (eg material, social, cultural). They highlight the continuous and unfinished nature of outcomes, taking what, in education and training, is commonly called a 'process approach'. They can be used to demystify actions and demonstrate the indeterminate effects and inevitable and ever-present internal contradictions within action. In the words of Seddon et al, relational analyses attempt to 'understand how things come to be the way they are; the practical lived experience of particular arrangements; and how the processes which give rise to particular social arrangements, and the experience of living them, have implications for the future because of the way they constitute, shape and constrain practice, and so, enable and disable continuity or change' (Seddon et al 1994, p132).

Emerging concepts and themes

Given the terms of the project brief and the analytical approach outlined above, the concepts and themes which follow would appear to be central to the evaluation.

What counts as competencies, skills and standards

An important component of the empirical investigation will be documenting constructions and practices of competency and competency standards. How are competencies understood? What are they used for? What is the relationship between standards and competencies and/or productive skills? What work do standards do? Are they about certifying a given level of skill that, it is assumed, has been achieved at the culmination of training? Are they about helping to create this skill?

One of the issues that will need to be addressed is the question of where competence resides. Is it part of the person, part of the job, or part of the setting? Cynthia Cockburn (1983), in her study of (male) printworkers, suggests that all three aspects need to be taken into account:

> There is the skill that resides in the man himself, accumulated over time, each new experience adding something to the total ability. There is the skill demanded by the job – which may or may not match the skill in the worker. And there is the political definition of skill: that which a group of workers or a trade union can successfully defend against the challenge of employers and other groups of workers (p113).

Again, there is the question of where standards reside. Are they part of the person, part of the job, or part of the setting? Following Geoffrey Bowker and Leigh Star, we will take a standard to be 'any set of *agreed-upon rules* for the production of ... objects' (1996, p2, our emphasis). Thus, in the case of the competently trained, competency standards are rules agreed by government and industrial parties toward the production of vocational curriculum and ultimately a coherent base of skills at work (eg a national pool of skills). They are a co-ordination device which seeks to give consistency to the skills and knowledges created through VET programs and sought by industry and enterprises. They are also fundamentally communicative processes.

Whether we talk about them as shared rules, or co-ordination devices, or communicative processes, we need to understand that standards have limits. As Michel Callon puts it, 'a rule, convention or cultural device does not govern behaviour completely since they comprise irreducible margins of interpretation. These margins of interpretation can be removed only during interaction, negotiation or discussion' (1997, p3). In other words, standards depend on interpretation and negotiation in order to work. Indeed, they are a source of interpretation and negotiation. They are never simply applied. On this reading of the operation of standards, competency standards are not self-evident and complete. Context, not simply content, underwrites the interpretation of competency standards. Competency standards function only because interpretations and negotiations are present and form, in a sense, the substratum of competency training.

Creating competence: established and emerging models

A relational approach to knowledge and skill issues asserts that all knowledge derives from particular practical contexts and is an embodiment. The need for a close relationship between theoretical knowledge and practical experience in work activities is fully recognised in VET. As Massimo Tomassini comments, 'The need to conceive learning as a continuous alternation of practical and theoretical knowledge is actually written in the genetic inheritance of training activities: they all originate from *apprenticeship*, a form of job insertion that is still very much alive and in which, by definition, knowledge and knowing what to do develop together in an inseparable relationship' (Tomassini, p1, emphasis in original). In a relational perspective, theoretical knowledge and practical knowledge are co-produced. This co-production underwrites what Engestrom (1994) calls a 'germ cell model' of competence development. Here, competencies, learning and training are inextricably intertwined (O'Donnell & Garavan 1997, p131).

In contemporary approaches to competency-based training in Australia, competencies start at a point (competency standards) and spread out. The standards are acknowledged to be 'the foundation for development' (Quirk 1997, p8). A major criticism of constructing standards as the foundation for occupational competence is that this construction 'to a large extent fails to recognise the active modification and subjective redefinition of work tasks that necessarily occurs continuously during the performance of a job' (Ellstrom 1997, p269, citing Leplat 1989). According to Ellstrom, viewing occupational competence in this way, encourages workers to *adapt* to the (work) environment rather than act on it, and, thereby, shape it to what they want it to be. 'In this view, occupational competence is defined and evaluated in relation to the successful performance of certain given or predetermined tasks, ie tasks that the individual is neither allowed nor expected to try to change and improve' (Ellstrom 1997, p269).

In an adaptation perspective on competence and competence formation, competencies are constituted as having no constitutive role. They tend to be constructed as a neutral background to the activity of developing training packages or assessing candidates for a particular qualification. This perspective leaves a number of unanswered questions relating to the kind of management necessary to preserving the appearance of neutrality and the consequences of this management for those immediately involved (eg practitioners, students and trainees). Arguably, the adaptation perspective also proves inadequate to understanding the character of knowledge and skill and how it is formed.

Working, learning and innovating

Innovation in the workplace is currently conceived to be created through the competent use of different kinds of knowledge – tacit and explicit – or of 'innovating skills' (Tomassini 1997 and Kuhn 1997, respectively). These knowledges and skills which are in a process of continuous formation and transformation enter into relationship with technology and other elements to produce innovation in the workplace. 'Working, learning and innovating ... are all activities based on knowledge conversion, in the sense of continuous circulation and use of the knowledge that the organization possesses and of the creation of "new knowledge" in response to innovative needs' (Tommasini 1997, pp5-6). In this perspective on innovation at work, training 'has the main purpose of facilitating knowledge transformation' (Tommasini, p12).

Analysing working, learning and innovation from a relational point of view involves considering the social and technical characteristics of actions and events and their interrelationship. In other words, it involves consideration of sociotechnical relations. Thus, innovation in the workplace is understood as a matter *using* new technologies, of interrelating skills and work innovations, and of deploying concrete work skills as an integrated element of occupational or work tasks. In emerging understandings of the relationship between workplace learning, competency training and innovation, competency training is oriented toward the creation of 'innovating agents' (Kuhn 1997). Innovating agents 'are not required to take in "training contents" more or less passively, but to formulate proposals and solutions, point out constraints, learn and re-interpret situations collectively and, last but not least, acquire the specific technical skills to master the innovation in its smallest operational detail' (Tomassini 1997, p7).

In these understandings, this relationship is not conceived from a technocratic point of view where workers adapt to changing organisational structures and technological innovation by taking on the new 'innovative paradigm geared to learning' (Tomassini 1997, p3). Rather, workers are constructed as needing to influence or shape their own working conditions and work content including the development and use of technology (Heidegger 1997). A shaping oriented perspective is, at the same time, a future oriented perspective. 'Instead of VET preparing students to adapt to socio-economic and technological developments, they should be given the necessary competencies for designing a new future – as individuals and in common action – affecting work, private life, technology and economics. Such a perspective aims for the development of experts with the ability to utilise technology in new work organisations for social innovation' (Attwell 1997a, p7).

In brief, we take the view that the success of CBT – its contribution to outcomes which are both desired and desirable in VET – depends, in part, and in some measure, on:

- industry, individual enterprises, employers, instructors and trainees actually using nationally endorsed competency standards to some vocational education and training effect eg to facilitate work-based learning, assess workplace competence, nationally accredit qualifications;
- an innovative use of these standards, where innovation is understood to be socially organised;
- personnel with the skills and training necessary to use the standards in an innovative way, that is, innovating agents;
- meeting the requirements of various stakeholders for occupational competence, where competence is conceived as needing to take technical, critical and socio-cultural aspects into account;
- encouraging the improvement of work, its conditions and contents including the social relations of the workplace;

- facilitating the improvement of learning and the creation of vocational expertise, including the development of work process knowledge and productive skill.

These measures constitute some of the criteria which will guide the evaluation. The ultimate significance of each of the above criteria to this evaluation is an empirical matter.

Research and evaluation questions

The questions to be addressed are set within the requirements of the prepared brief and draw on themes that are emerging in the literature under review. They are a guide to gathering information using the three perspectives outlined earlier (p. 4). A sample of these questions is as follows:

- are competencies being used in individual enterprises, how are they being used and to what effect?
- what counts as competencies and competency standards in the industries and enterprises under investigation?
- how does CBT compare with other models of vocational education and training?
- to what degree is CBT meeting the requirements of: industry - individual enterprises - employers or supervisors - instructors and trainees - different industrial settings?
- how successfully do competency standards reflect the requirements of these individuals and groups and what constitutes 'success'?
- how are selected national competency-based vocational education and training programs being developed and implemented by individual enterprises, employers/supervisors, instructors and trainees?
- what model of development underpins these programs?
- what 'user' identities (individual and organisational) appear to be emerging in and around CBT?
- what contribution has CBT made to the achievement of skills in VET?
- what contribution has CBT made to learning and innovation in the workplace?
- what contribution has CBT made to the social shaping of the workplace and social relations at work?
- what contribution has CBT made to the integration of general and vocational education and training through, for example, key competencies?
- what contribution has CBT made to other projected outcomes in VET eg creation of partnerships between providers and enterprises?

Conducting the evaluation

The project will be conducted over one year and organised into the following three phases:

The first phase will familiarise the research team with current developments and debates on competency-based training in education and training. Work has already been completed in relation to evaluating the operation of competency-based curriculum in particular institutions, that is, enterprises and technical and further education sites (Mulcahy 1997, James & Coleman, forthcoming). These evaluations will need to be extended, and recent scholarship by other researchers in the field will need to be incorporated. Phase 1 has three related elements:

- a detailed review of secondary literature, both Australian and international, on competency-based training;
- a review of evaluations of competency-based training that have been conducted informally by industries and enterprises;
- a review of current developments in vocational education and training, including analysis of discussion papers, policy documents and recent reports that bear on issues in and around competency-based training.

The second phase will comprise the empirical component of the evaluation. It has two related elements:

- **investigative telephone interviews** of training personnel in 200 companies throughout seven states and territories of Australia. Companies of various sizes (small, medium, large) will be selected from different industry sectors (Manufacturing, Services, Construction, Agriculture, Forestry and Fisheries) and located in metropolitan and rural and remote areas. Attention will be given to social and cultural aspects of the selection process eg feminised industries and occupations will be taken into account. The telephone interviews will provide a broad picture of competency-based training, establishing the technical component of the evaluation, that is: how CBT is being implemented; how competency standards are used in the development and delivery of training programs; and how effective competency standards are perceived within each company.
- **intensive case studies** of national competency-based VET programs in companies located in each of the states and territories of Australia. The eight intensive case studies will be made through purposive sampling to obtain maximum variation and increase the scope or range of data gathered. These studies will provide a detailed understanding of competency-based training from a critical and socio-cultural perspective. Case data will be collected from a matched subsection of companies from the population above, who will all be engaged in national training using industry training packages. Data collection will be made at all levels of the work process.

Thus, the training groups involved in the case studies will include trainees of a non-trades operative kind, trainees from assorted trades and technician areas, middle level supervisors and front line managers. Intensive data gathering will involve *observation* of the delivery of a module or modules over a period of several weeks and *interviews* (6 in each site) with various individuals (eg employers/supervisors, instructors, trainees). These interviews will focus on: constructions of competency and competency standards – how 'competencies' and 'standards' are defined and used; practices of program design and use eg who undertakes developmental work, how and to what end; the relationship between competency standards and learning outcomes eg contribution of CBT to 'the learning curriculum' (Billett 1996c) etc – see research questions listed above.

The final phase of the research will involve a period of more intensive consultation with various interest groups towards comprehensive examination and reflection on the data and the preparation of a total project report. Interim reports on the progress of the evaluation will be made regularly in an attempt to give voice to all of the actors (or interest groups, stakeholders) implicated in action around the contested phenomenon called competency-based training as we all come together to struggle things out.

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Enterprise-based research and organisational development in VET providers: Patterns and possibilities

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The development of the training market in vocational education and training (VET) has increased the need for training providers to monitor their own work practices, their position in the market, and the scope for innovation and development. These new demands for a market sensitive 'self-reflective' organisational capacity have coincided with moves by government to outsource their research and development activities through competitive tendering. This expansion of consultancy and research has provided a welcome source of income to TAFE Institutes and other public VET providers faced with increasing their proportion of non-recurrent funding. These practical imperatives driving research in VET providers have also been endorsed by policy-makers. In 1995, the Victorian Office of Training and Further Education (OTFE) published a Research Strategy which affirmed the committment of the State Training System (STS) to extend research capacity.

These developments encourage VET providers to become more active in research and to integrate enterprise-based research more systematically into their organisations. But are VET providers taking up research? And how do they see it linking to their enterprise operations?

This paper addresses these questions by outlining findings from an OTFE-funded research project, conducted in 1997, which investigated the range and character of research being conducted within Victorian training enterprises (Seddon, Malley, Clemans, Sharpley, 1998).

The project and its concept of research

The project investigated perceptions of:

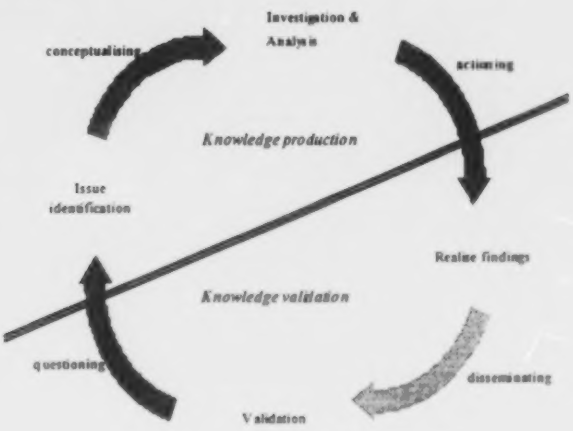
- Enterprise-based research in Victorian VET providers;
- The integration of research into enterprise operational activities in ways which promoted strategic reform within the STS; and
- The research skills and capabilities that were available, and needed, in order to meet enterprise goals and system reform priorities.

'Research' was conceptualised through a three phase literature review. Policy commentary indicated that VET research was seen as *a process of producing useful knowledge* (eg. Harmsworth, 1995; Thorn, 1995).

Formal definitions of research (eg. Australian Bureau of Statistics, 1993; Kogan, 1995; Selby-Smith, 1997) presented research as a domain of practice (research and development) which involves both *processes and products oriented to enhancing understanding, the application of knowledge to practical activity or a combination of the two.* This domain of practice was represented as a research cycle, as shown in Figure 1. It comprises three main phases of activity - knowledge production, dissemination and validation. Each of these phases entails a range of research practices which involve individuals' in a succession of planning, action, reflection cycles. These action-reflection cycles, aggregated and oriented to the three phases of the research cycle, contribute to the overall goal of producing publicly available and endorsed 'useful knowledge'.

Finally, research was analysed as a form of *work* oriented to knowledge production (eg. Connell, 1983; Watkin and Marsick, 1993; Sefton *et al*, 1995). This literature highlighted the practical work activities and the particular organisational contexts which sustain research.

Figure 1: The research cycle



This conceptualisation focused the investigation of enterprise-based research. In the course of the study, 'research' was operationalised as:

> Anything which involves considering an issue or trend in a focused way, collecting information about it systematically, thinking systematically about what the information is telling you and turning your insights into action outcomes.

Data collection and analysis

Data were collected from 17 VET enterprises: 9 TAFE Institutes, 4 community providers and 4 private providers, including examples of enterprise-based, industry-based and commercial providers.

The primary data source was an interview with the Chief Executive Officer (CEO) of each of the 17 enterprises. These CEO interviews reviewed the research being conducted in each enterprise and explored the perceived view of research in the enterprise and its contribution to realising enterprise goals.

Supplementary data were collected through a survey of heads of administrative units within each enterprise and through a research strategy planning workshop conducted with 2-3 people from each enterprise. The survey provided data on research conducted within the administrative unit, the unit's research capacity and barriers to enterprise research. The workshop provided data about current and preferred research capacity.

Data were analysed to provide general descriptions of enterprise-based research. The CEO interviews were also subjected to more intensive content analyses. These considered the way CEOs talked about research and its relationship to their enterprise operations, and also examined CEO perceptions of factors that influenced the level and character of research in their enterprises.

Patterns of enterprise-based research

The CEO interviews indicated that all of the 17 VET enterprises were engaged in research of some kind and there was acknowledgment that research had value in relation to VET enterprise operations. While larger enterprises frequently indicated a more substantial range of research activity than small enterprises, this was not always the case. It seemed that the character of the research being conducted and its relationship with operational activities within the enterprise was more significant than the simple quantity of research being done.

The diversity of research in each enterprise and the range of articulations with broader enterprise activities is illustrated in the following profiles. Direct quotes from CEO interviews are in italics. Each profile has been selected because it represents a distinctive pattern of enterprise-based research activity. The profiles highlight the contexts in which research is:

- Not integrated into enterprise operations (Profile 1);
- Perceived to be a line of business (Profile 2); and
- Used to develop organisational capacity (Profile 3).

Profile 1: Non-TAFE provider, research not integrated into enterprise

Provider A is a small community provider which began as a self-help support group. It has two fulltime staff supplemented by sessional tutors. It is closely integrated with the local community and in networks with other providers, local industry and community and welfare agencies. They benefit from some research done by these other agencies - gaining feedback about classes that should be run to support local community needs - but do not do much research themselves.

Research is seen as a largely instrumental activity. They collect a range of data, using the enrolment system, which is returned to ACFE for reporting and accountability purposes. *If we are getting funded we have to account for it, and the only way of accounting for it is through the stats ... So we say, if you've given us the money, there's the student contact hours and we've provided this, and this is a record.* They gain feedback on student satisfaction by giving student evaluation forms. *We do have sheets ... but because they are language students, they just copy what the other person does. We might need an interpreter.* They also do random checks where a teacher *gets three students to come in and talk to us and see how everything's going.* They question the need to write everything down in a formal way. They have just started staff appraisals but wonder whether it is useful for tutors. *The students walk out if the teacher is no good.*

The biggest challenge is their dependence on short-term funding derived from competitive tendering. *We are being asked more and more to write three year business plans with twelve month funding.* This has meant a loss of infrastructure. *We've had infrastructure taken away, and we are just creaming a bit off each program.* On top of this there have been huge changes in the workload - *its just doubled - you are just trying to keep the quality up in the programs you've got at the moment. How do you do the research in order to apply for the funding when you haven't got the resources to do it?*

Informal networking is the key to enterprise operations. It is an important source of information. *We don't need to market ourselves - if we do a good job, they come to us.* It permits resource sharing. The suburb *has a fantastic network of workers, they have a workers coalition who meet on a monthly basis and its a great way to introduce a new program or a new worker to the area, and referrals too.* It replaces and supplements formal research and data collection. For example, new resources are recorded on a continually updated bibliography but *at our staff meeting we get teachers to talk about these resources. The teachers tend to talk about how they used the resources, so it's an exchange of information.* Such networking multiplies the impact of existing resources but is sometimes difficult to document and account for. Its *what you could call a 'ripple effect' in the community ... there may only be a core group of six, but what they go out and do in the community with our support ... may then affect 500 people. That sort of thing is very hard to get data on.*

Profile 2: TAFE Institute, research as a line of business

TAFE B is medium sized college with under 20,000 students and just over 500 equivalent fulltime staff. The *vision of the organisation is to provide a service to our customers: industry clients, past students or a particular curriculum service.* Research is seen as useful way of achieving this enterprise goal.

There is a strong emphasis on research for planning. *There's been a huge focus on data/information collection ... as part of the quality focus.* Focus groups have been used to monitor customer feedback. Surveys were used to get feedback from staff and students - *We actually got a consultant in to do that.* All this data feeds into the strategic planning process and is used to develop action plans. Course evaluation and focus group data are sent to relevant

Associate Directors who use the data to inform course improvement. Another consultant did some work related to marketing short courses. *We now have a marketing manager, a publicity officer and a desktop publisher.* A quality improvement team has been looking at course improvement and *what people do with the information when they get it. No good evaluating if you're not going to improve and look at your program delivery in the future and make sure you do something with it.* Benchmarking has also provided useful feedback. Evaluations are analysed by the head of department and poor staff performance is targeted. A skills audit of staff has been conducted that provided a gap analysis of staff skills. *Each year as a part of our strategic planning, managers have to work with their staff to develop a staff development plan, so we will have departmental priorities. We look at the results of the skills audit and see where the gaps are and get people to register for staff development in the areas that they need to build up.*

The growth of research at TAFE B has been driven by the desire *to become the world's best in vocational education and training and one of the ways the Director saw that happening was by us developing through research.* The establishment of the R&D Department *was a deliberate strategy of management* that has expanded project-based research in the Institute. This initiative was initially funded in-house, built up through project-based funding and is now self-financing on the basis of successful contracts and tenders. *It's a money spinner.* There is a weekly Tender Search, although the department is *often included in selective tendering where we've done work for people before or word of mouth.* All tenders go through the department and each project brief is assessed by the head of the R&D Department and other relevant heads of department. *We assess whether we have the capacity to go for this project. Do we have the expertise? Can we schedule it into our workload here?* On this basis the department's staff has grown five-fold.

The deliberate growing of research at TAFE B *has brought us to where we are today.* Research *keeps us informed about where the vocational education and training system is going and keeps us at the forefront of training reform.* It is also a strategy for staff development. *It's a deliberate strategy to bring people in from the departments, to skill them in research methods and VET policy and practice. So that's like an action research method.* Staff opt into the department because they *get paid about $45,000 - that is, higher than the highest teaching level .. and because of interest and a change from teaching.* Professional development is encouraged. *There is a budget for that, both a department and a central budget. When people undertake professional development they have to say where it fits in with the department and Institute strategic plan, so people are forced to think about why they are doing a particular activity. But there are a number of staff that perhaps won't volunteer to participate in the curriculum area and they wouldn't see research as a critical activity, even though they might be doing it in their everyday job (like evaluation). There would be a need for support in these areas.*

Profile 3: Non-TAFE provider, capacity-building strategy

Provider D is a private provider that has grown out of government funded training and industry reform orchestrated through a national ITAB. They see their business as, primarily, training, with research, publication and professional development for VET staff as further lines of activity. There are 19 staff with 3 full-time employees. They are *refugees from TAFE* who share a commitment *improving their own practice - being learners in their own right,* both in their work and in their professional development. *I'd say we have a culture of research in our organisation.*

Like other providers receiving public funds they collect data for accountability purposes and have a financial management system. *You've got laws to meet .. a small organisation's just as complex as a big one in that regard.* But their distinction lies in the way they make research central to all their work. They have undertaken a range of funded research projects and use an investigative approach to training provision and in their teaching. *In every company where we conduct training our consultants undertake research into the production processes, systems, the culture, the terminology, the formal and informal communication networks, the customers and the suppliers, the management structure and the people - their skills, previous education,* *country of origin, languages. All of these factors are incorporated into the training that is developed for that company ... Research is our major way of moving forward.*

Action research sets the paradigm for their work and their own practice. They generally do not tender for projects because the questions being asked are too narrow - *the problem is the way the* funding agents *couch what they want. We are more interested in doing funded research that .. asks the difficult questions, so that we can use research to keep ahead in our thinking.* Research and learning is an ongoing process in the organisation. Staff meetings are scheduled so everyone can attend. Speakers are invited. *X came in and gave us some academic input and we responded by relating this to our practice.* Staff skills are being constantly upgraded. Of the 19 staff, four are studying for PhDs, another four are doing Masters and one is studying for another postgraduate course. *Anything that a staff member writes is shared amongst the group* and people are encouraged *to use their work with us as the basis for their research. We don't expect people to do research that is directly aligned to our business. We are really happy that people have a fairly broad area of research. We would maintain that any good qualitative research conducted by our staff has benefits for us as a group and for our business. Because people are interested in what they are doing at work, much of it tends to be useful anyway.*

This business approach was developed on the basis of their initial three year project funding. *We had the opportunity to plan, experiment, evaluate and reflect, and to try out different strategies and approaches.* But now, with this enterprise capacity and good networks in place, Provider D can sell their approach directly to employers. *The employers can get wonderful returns from this [training] if they are committed to using the skills, expertise and results of their employees' workplace projects done as a part of their course of study. We are looking for a win-win situation ... the company got a lot out of [the training], and the workers just loved it because they learned so much about what other people were doing and they came to a better understanding of the whole operation.*

Discussion

The various orientations to research evident in the sample enterprises were closely related to the way CEOs talked about their enterprise core business. In each case the CEO appeared to be relating the use of research in the enterprise to a distinctive generic model of organisational development.

Three models were evident:

- Informal model: In less than a fifth of sample enterprises research was seen to be more or less irrelevant to enterprise core business. Organisational development was seen to be a consequence of less formal processes which drew organisational intelligence from good client networks and informal reviews of enterprise core business. More formalised methods of gaining organisational intelligence, such as research, were not seen to be a part of enterprise operations. When research occurred, it was seen either as a distinct line of business which was required to generate income or, more commonly, competing with other enterprise priorities for enterprise resources.
- Strategic planning model: Almost 60 per cent of enterprises undertook research for planning and/or market research and saw this work as being fundamental to good strategic management within their enterprise. In many cases, research was explicitly described as a strategic management tool that could be taken up and used to achieve specific ends, such as the collection of data to inform strategic planning and decision making, and the gathering of market intelligence. Organisational development was seen to be a consequence of good data collection, data management and data analysis that could be used to inform planning and other enterprise decision-making. System reform is a driver for this model of organisational development. Providers were willing to allocate resources to support this kind of externally driven research but expected appropriate returns on their investment. There was some concern that, relative to its costs, such research for strategic planning did not provide easy or adequate inputs to decision making.

- Capacity building model: About a quarter of the 17 providers saw research as fundamental to their core business because it enhanced staff development and, therefore, enhanced organisational development. Growing the skills and capacities of staff was seen as the key driver in growing the enterprise. Organisational development was seen to be a consequence of both the *findings* of research which informed strategic management and decision making, and staff participation in research which provided *contexts* for staff development. Research was integrated into the active life of the organisation rather than being a distinct set of activities or strategic tools that were applied to specific organisational ends. The view of research as embedded in the organisation can be described as a *research culture*. Providers adopting this model of organisational development allocated resources to support all types of research because they each enhanced enterprise operations by returning findings, contexts and, where appropriate infrastructure existed, income.

These models are summarised in Figure 2.

Figure 2: Relationship between research and organisational development

Informal model	→	Strategic planning model	→	Capacity building model
Research and organisational operations are compartmentalised and separate.		Research used instrumentally to meet system and enterprise priorities.		Research is integral to the organisation. Seen as a means of building longer term enterprise capacity.
Individual research not absorbed by organisation.		Individual research used on a limited fit basis.		Individual research integrated productively with organisational operations.

These models of organisational development were not specific to particular categories of VET enterprise but were evident across TAFE Institutes, community and private providers. However, there was some indication that the informal model was preferred by smaller community and private providers. There was growing interest in the strategic planning model as a consequence of system reform, especially new pressures for reporting, accountability and market research.

The motivations driving research in enterprises pursuing the strategic planning model appeared to differ from those enterprises showing a capacity building approach. In the strategic planning enterprises research was commonly described as being driven by external motivations and sharply focused on data collection. Capacity building enterprises revealed a research culture which more often emphasised internal rather than external motivations. Research was seen to be integral to a process of continuous improvement based upon review, reflection and redesign.

In some enterprises, data collected as a result of external pressures for research were seen as difficult and expensive to manage, and not returning significant benefits to the organisation. This assessment that data collection was only for external purposes, and was a cost rather than a benefit, encouraged a retreat from research. This retreat occurred even though the problems of data collection, information management and actioning were a consequence of organisational arrangements as much as the nature of the research itself.

In other enterprises a *practical link* was established between data collection, analysis and outcome improvements. This required organisational support but enabled the enterprise to contain the effort associated with data collection and extend the analysis and actioning of data in processes of organisational reflection and redesign. In such cases, research driven by external motivations became linked to internal motivations to review, question and improve practice. It lead to an association between research, organisational development and change which moved the organisation towards the development of a research culture.

The data suggest that transitions are possible from an organisational development approach in which research is used as a strategic tool to an organisation with a research culture. This transition hinges on individuals' perceptions of the *practical utility* of research in the enterprise. Its effect is to transform the enterprise into a learning/research organisation. This finding indicates that system commitment to building a research culture (eg. OTFE, 1995) can be realised by generalising the capacity-building model of organisational development and research.

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Unravelling independent provision for occupational learning in the Hunter region 1900-1990

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The objective of education is unassailable. It is to prepare the Australian population to contribute to the country's advantage socially, economically and politically. If occupational education in Australia is to be upgraded, 'other' education, ie. that group of educational activities in the Australian adult community left over alter primary, secondary and higher education sectors have been identified will require greater clarification (ANZSIC 1993). Instead of a vigorous, focused, yet non-homogeneous mass of received educational activity 'other' education is virtually unknown. Its intent, practices and strategies require unravelling and to be made more transparent Within the post-compulsory private sector the first step is to clarify issues and assign responsibilities.

This project, with two papers already presented in 1997, has been supported by two ARC grants. The first analysed theoretical issues of historical research, nomenclature and ANZSIC definitions associated with 'other' education (Barker & Holbrook 1997). The second paper established the sources and providers examined so far (Holbrook, Barker & Truelove 1997) This paper presents examples of the concepts of intent, practices and strategies. The illustrations, taken from the Hunter region 1900-1990, demonstrate a wide and diffuse pattern of occupational educational practices. In turn this material, previously invisible, highlights the requirement for both increasing and classifying our knowledge about 'other' education.

Background

In the Hunter region Sands Directory lists thirty-six centres (Sands Directory). These were scrutinised at five yearly intervals from 1902-1931.The findings present an anomaly. Special interest groups were building, no doubt relatively costly, premises for very limited time usage before the community provided facilities for multi-group occupational education. Historically this anomaly often formed the genesis for self-improvement as these interest groups, eg. benevolent societies, realised their own specific educational needs.

However when institutional providers of education, such as the Workers' Educational Association of New South Wales (WEA), the National Roads and Motorists Association NRMA, the Australian Institute of Management (AIM), the Institute of Automotive Mechanical Engineers (IAME), the International Correspondence School (ICS), the Australian Insurance Institute, the Australian Institute of Banking and Finance Inc. were examined, alternative pathways to education were revealed.

So far in this project seventy six providers of education to the Hunter region have been examined either thoroughly or in part. Several will need revisiting (for example the records of some trade unions held in the Noel Butlin archives). The examinations revealed differences in educational intent, practices and strategies. The potential weakness inherent in comparing examples of intent is recognised, but in this pioneering venture into uncharted waters such differences should not prevent exploration. As did most social activities in the communities special interest groups waxed and waned. Not only businesses have come and gone but social groups, educational providers and industrial institutes have also developed and faded.

The Federal Government is currently swinging policy towards private providers and open markets. What has not been clearly recognised by government policy makers to date is that many large educational private providers are not growing. For example membership of Lions, Apex, Rotary, CWA have diminished (SMH 1998). Young people apparently are bypassing such general community service groups and joining single issue associations which focus on the 'environment', eg. rainforest preservation, or 'save the whale'. In addition ethnic groups have demonstrated a reluctance to join traditional Australian committees, such groups preferring to contribute from their own ethnic enclaves.

Two other strands in this tangled matrix of independent occupational education are identifiable. On the one hand, institutions are continuing to fracture, eg. the Real Estate Institute of New South Wales (REI), and, on the other hand organisations, such as accountants, lawyers and computer specialists continue to amalgamate.

The second strand concerns nomenclature. As Harper demonstrated, organisations use and define concepts differently (Harper 1997, Barker, Nomenclature 1996). Establishing acceptable terms for communication and research purposes remains a core obstacle as the Conference of Directors of Technical Education highlighted over a fourteen year period (Barker Thesis, 1996).

When compared with the relatively ordered structure inherent in primary and secondary school systems occupational education is diverse, diffused and lacks cohesion. For many educationalists occupational education has been difficult to administer, whilst for others the concept itself is still barely acceptable (Titmus, 1989). Add to these perceptual differences within the public sector educational activities of special interest groups such as religious, cultural, focused voices of specific industrial and commercial businesses and the parameters of independent provision become more diffused and widespread yet pervasive. However political forces were never far from structuring activities associated with the provision of occupational education (Tannock 1969). When changes to apprenticeship training were under consideration, stakeholders such as trade unions, employers and governments found it essential to control any contributions made by educationalists (Barker 1996).

Intent

Variations in intent can be observed when examining the activities of the WEA, AIM, Surf Life Saving Association, the Real Estate Institute of New South Wales and the NRMA.

From 1914-1990 in New South Wales the WEA provided an ever-widening range of viable courses, increasing from 3 to 766 with 50% of the courses being conducted outside the metropolitan area. The Hunter region branch supported the movement from 1917 (Higgins 1957 and Annual Reports). Its explicit intention was to develop the general education of adults. In that sense the WEA provided services similar to the stated policy of the New South Wales Technical Education Department in 1974 when the intent was to focus on the individual needs of the local community (NSW Dept Tech Ed, 1974). The AIM, Newcastle branch, similarly provided an ever-widening range of courses but focused more narrowly on educational aspects of management. The AIM neither intended to offer training for all individuals nor to maximise its profits (Hunter News). Other organisations offered a restricted range of courses but had the intention of maximising profits, for example Newcastle Business College, Stott & Hoare, Blennerhassets, Metropolitan, Hemingway & Robinson and the International Correspondence School (ICS). Successfully, for a fee, all of the above provided education paths to individuals.

Other providers were not so explicit in their educational intentions. Started in 1907 the Surf Life Saving Association in the Hunter region had the intention of saving lives of the surfing public. They offered a wide range of awards. However, surf lifesavers required ever increasing knowledge and skills in order to perform their primary intention more efficiently. Various levels of entry and competency were imposed such as the Bronze Medallion, resuscitation and use of equipment. In addition patrol members were required both to develop the ability to control crowds and to perform administrative duties. The education content of actual surf life saving activities, independently of the development of club officers and committee members, was secondary to the prime intent but nevertheless was vital for the effective development of the movement.

A mixture of intent can be observed in the REI where the lobbying of regulators was concurrent with the raising of professionalism within the industry. Although not of primary urgency the provision of educational courses was one avenue to achieve both of these intentions (Kass 1987). Entry was controlled to some extent through granting diplomas and licences to those candidates who were successful in passing the REI examinations. In addition to standard courses the REI pursued several other developmental practices. Courses were but one of a number of planned activities which generated progress towards the end objective of the REI, namely the enhancement of its members' roles, in both the real estate industry and the community (REI Annual Reports).

Finally the NRMA provides an example of an organisation at the far end of a continuum of intent from individuals to the education of the community. Setting aside the education of members of its staff, the NRMA projected from its establishment in 1920 a firmly entrenched traditional intent of educating all road users. For example the organisation implemented, at considerable cost, campaigns on road safety, lobbied intensively for road signs, road markings and road safety courses for both school children and adults. Most importantly it advocated the establishment of the Main Roads Board. In addition it developed and distributed road maps, tourist brochures and carried out research on road accidents, road improvements and safety features of car designs. Historically, in other words the NRMA provided the community with material containing a strong educational content (Open Road).

All of the foregoing organisations contributed to the education of all participating stakeholders. What is required is a further breakdown of intent into demonstrable factors. Cliffold suggested a model using church and school organisations (Cliffold 1985). Such bodies, however, being regulated and relatively firmly structured were found to be inappropriate for the study of markedly different organisations and it has been necessary to modify Cliffold's foundation model to an occupational education setting (details available from the authors). Discussion of this model is the subject of another paper (Holbrook and Barker forthcoming),

Educational practices of Hunter independent providers

Following the introduction of TAFE in 1974 its aftermath of cousins and relatives, such as competency based training and open markets assumed a life of its own. VET, used both as a system and as a descriptive term for vocational education and training, dominated the occupational literature as well as research conferences. Incorporated in VET, although often based on unproven assumptions, a morass of insufficiently explored concepts such as RPL, flexibility, accreditation, user choice and competition has been overwhelmingly examined within the public sector of education. Nevertheless, in terms of research, private providers remained at the ground end of the occupational learning see-saw but not necessarily so in terms of constructive provision.

One facet of providing occupational education/skills/human resource development is the wide variety of practices. Researchers, focused on public sector provisioning, emphasise courses. In reality within the Hunter region for a significant part of the twentieth century independent organisations have used, in addition to courses, a far wider range of practices for knowledge transfer, eg. the Australian Institute of Banking and Finance Inc, the Taxation Institute of Australia, the Real Estate Institute of New South Wales and the Institute of Automotive Mechanical Engineers. (The authors have developed a classification of these practices in their work).

Using private providers operating in the Hunter region 1900-1990, examples follow which demonstrate this variety of practices. However, the educational contribution varied considerably between organisations and working conditions. Westpac and the Australian Institute of Banking and Finance Inc. illustrate some of these differences.

Westpac, with its widening and scattered branch network, increasing staff numbers and, especially following WWII, a radically changing technology focused on developing its own staff Between 1949 and 1990 staff numbers increased from 6,200 to 45,395. The formal recognition of Westpac's human resource development can be summarised as follows.

The training function of the bank commenced in 1955 when an officer-in-charge of training was appointed. A staff training centre was established in Sydney by 1958. This centre also included some research personnel between the years 1962 and 1968. In the latter year a separate Staff Training Research Department was set up and was independent until 1980. By 1971 a Staff Manager (training) had been appointed and the position continued to be so described until 1976.

In 1977 there was a Training Section within Personnel Division which remained until 1981. In 1982 a Training and Development Division was established. Westpac Training Pty Ltd was formed in 1983 (Westpac Archives Series RGI/01 12). Westpac's Training Handbook 1988 &1989 consists of 18 pages and lists 80 programmes (Westpac Archives Series B346).

In the Hunter region, Westpac, with a staff of four at four branches in 1900, grew to 215 in 21 branches by 1963. Until 1955 training practice had been 'one to one' at the local branch. However the complexities of banking meant that for the future this traditional approach was perceived by the bank to be inadequate. Staff development became a more focused, centrally managed responsibility. Roughly two-thirds of staff officers attended some formal course in any one year (Westpac Annual Report 1978). In addition all branch officers were required to study some specific area of knowledge. In 1978, for example, 7,000 attended central training centres whilst 300 enrolled in the Senior Management Courses (Westpac Annual Report 1978). But group courses for banking knowledge alone were also inadequate. It became apparent that banking skills alone were insufficient for the bulk of competitive banking officers. When a merger of the Commercial Bank of Australia Ltd and Westpac occurred in 1982 a special in-house journal 'Merger News' was published which kept all staff up to date on what was happening, plus training programmes for all officers whose work was affected by the merger. The expansion of banking requirements necessitated additional modes of knowledge transfer (Etruscan, 1981). Correspondence courses, placements through ever quickening transfers, encouragement to take leadership roles in communities, visits by specialist staff officers, increased attention to staff assessments, newsletters and staff journals, all made educational contributions to staff development. In addition sponsored officers attended all sorts of educational programmes arranged by institutes other than banks. One of the 'outside' organisations supported by Westpac staff members was the Diploma and Certificate Courses offered by the Australian Institute of Banking and Finance Inc.

In 1981 Westpac supported 217 staff members enrolled in these courses (Etruscan 1981). As well, Westpac staff officers contributed their services to a wide range of seminars, conferences and outside courses. From 1955 Westpac maintained a high educational budget which, used as a criterion of support, justified these educational activities. Continuously changing conditions in the workplace demanded a finer assessment process of educational practices. Westpac utilised a wide range of educational practices and serves as but one example of a large organisation adapting to changing staff requirements.

Early in the 20th century a number of smaller banks were operating in the Hunter region (Bankers Magazine). Over time several of these banks were absorbed into the 1990's situation of four large banks plus a plethora of financial institutions which offered a restricted range of facilities. That is, a fracturing of the financial services industry took place concurrent with a consolidation into a smaller number of banks. The staff in banks, however, had not only to gain banking knowledge but how effectively to apply that knowledge within the community, particularly with a high transfer rate. In 1961 Westpac was averaging about 125 per week or 6,500 transfers per year (Westpac Annual Report 1977). Assuming that the Westpac pattern was roughly paralleled by the Commonwealth, ANZ and National Banks (with their ancestry acknowledged), it can be claimed that banking was a significant contributor to post compulsory education in the Hunter region 1900-1990.

Insurance as a related industry provided another significant group of skilled employees in the Hunter region. In 1901 one hundred and six insurance companies offered insurance services, including lending facilities. The major insurance companies provided a range of practices similar to that of the banking industry (Mayfield 1978).

The Institute of Automotive Mechanical Engineers 1933-1990

The objective of IAME in relation to education was to provide suitable training facilities and to establish standards 'that would recognise the skill of tradesmen'. Initially, in 1934 the IAME commenced as a qualifying body conducting its own examinations and issuing certificates of competency to those who passed (IAME Journal 1952). This position was consolidated by The Licensing Act of 1981 which made compulsory the licensing of automotive mechanical engineers.

IAAIE also provided courses on a franchise arrangement based on training manuals developed by manufacturers, such as O'Briens Glass Windscreens. These attracted significant numbers, especially in country areas, but suffered from the difficulty of coping with individuals who booked to attend and then, owing to a sudden rush of work, cancelled. By 1990 some 400-600 agents had attended the O'Briens course.

While correspondence courses were also available the chief source of updating knowledge was the IAAIE Journal, 'The Automotive Engineer'. The journal focused on the provision of technical data on new models of cars and so provided a major source of information, especially for members living in relatively isolated areas or who elected not to attend lectures. The Newcastle centre had demonstrated vigorous growth from its inception in 1933.

With a membership of 15,000 the numbers sitting for examinations have expanded from the 400s in the l98Os up to 3000 per annum in 1995-97. Linked with this activity since the post WWII migrant intake has been the challenge of testing applicants with limited English language skills (Automotive Engineer).

Strategies

Strategies have to be determined and managed by organisations. Aspects of policy and management such as funding, facilities, administration, management, personnel and locations were vital for the success or otherwise of an organisation.

For example, how did the organisations finance their educational activities? The Securities Institute of Australia adopted the strategy of charging fees for membership at a level adequate for the Institute not only to cut even but to make a profit. That is, the Institute made training pay as it had done from its inception in 1966. As opposed to course and administrative costs being burdened by expensive staff salaries the success of this strategy was assisted by extensive use of senior management volunteers. The success of the funding strategies adopted by the Securities Institute of Australia between 1966-1996 is demonstrated from the rapid enrolment growth from 2,500 to 11,493 (Securities Institute Annual Report 1996).

The records of graduates from courses at the Adventist College, Cooranbong, NSW revealed an alternative funding strategy (Avondale College). This independent college offered an extensive range of courses, provided excellent facilities as it had done from the beginning of the twentieth century. The small numbers of graduates from some of the courses gave an illustration of an education facility continuing despite high cost. Funds for the college, it can be assumed, must have been provided from other activities of the Adventist movement such as hospitals, manufacturing, dairies, timber, church income. Apparently a proportion of gross Adventist income was allocated to support the education of students, including a significant fraction in direct occupational education.

Conclusion

Sufficient data has now been collected (1997-1998) to indicate the potential for a three-way classification model for providers of occupational education in the Hunter region 1900-1990. Gaps and discontinuities of intent, practices, and strategies have to be accepted. Detailed examination will follow of both selected private providers and related issues. Such issues could include the role of interstate differences, development of an effective filtering process bridging research and policy making, definition of nomenclature, processes for resolving power plays between sectional interests and clarification of educational adjustments needed as the effects of globalisation gain momentum.

Editors' note:

Some tables and archival references have been deleted from this paper. Please contact the authors for a full version of their 'working paper 4'.

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FILE NOTE — 17 FEBRUARY 1997
RP04 — SALARY ACQUITTALS

When you go through the internal budgets for RP4, RP4a, RP4b, RP4c and RP4d, there appears to be approx $37,550 left to acqit, compared with the sum of salaries actually left to acquit , viz $24,050 (plus $5,500 re contractors fees which we will probably acqit to ourselves now). (refer attachment)

The difference ($13,499.81) must related to some acquittals done in November 1996 re Phase 2, viz :

G.Hawke	$9260.25	RP4, 4b, 4c
R. McDonald	$4,455	
Total	$13,715.25	

Consequently, I have arbitrarily decided to handle this by reducing acqittals as follows:

Geof Hawke

RP4	5000
RP4b	4000
RP4c	260

I will take the Rod McDonald $4,455 against the contractors $5,500.

Mapping teachers' work, charting new futures

Peter Kell
RMIT University

Jo Balatti & Angela Hill
James Cook University

Sandy Muspratt
Griffith University

John Blakeley
TAFE Queensland

The research principally investigated how professional practice has changed as a consequence of organisational responses by TAFE to the Open Training Market. The research examined the patterns of teachers' work, the skills and capabilities required in the context of a competitive training market.

This research involved an exploration of how TAFE Institute teaching staff visualised and conceptualised their work, its changing nature and strategies associated with meeting the educational challenges arising from a dynamic training environment. The research also sought ideas and proposals from teaching staff on how they might acquire the skills and capabilities identified through the course of the research project.

Research design

The research consisted of a series of site visits and interviews with 45 teachers and educational staff in three TAFE Institutes in Queensland during 1997. The project was designed by the James Cook University research team, in consultation with the research project reference team from TAFE Queensland. It includedi Individual and group interviews, a reporting back session anda written report to the Institute.

The research design attempted to facilitate maximum input from TAFE Institute staff by interviewing teaching staff at all levels in the Institute; providing a written interview summary for the participants to clarify and verify interview material; and providing a reporting back session for all participants on the final day of the research project.

This research was not conducted as an efficiency study, nor a management review, rather it was a qualitative research project examining participants impressions.

It provides TAFE Institute staff with an important opportunity to capture a snapshot of developments from a variety of perspectives which is not normally possible in quantified research methodologies. The research project could be best described as providing a mirror for TAFE Institutions to examine and assess their responses to the impact of the OTM and the changing patterns of professional practice.

Policy issues

Since the late 1980s there have been profound changes to the structure of vocational education in Australia. These may be basically summarised as:

- The establishment of the training industry and the emergence of a mix of private and public providers of training in the context of a competitive training market (Deveson, 1990)
- The distribution of training funds on a competitive basis to a mix of providers (Deveson, 1990; ANTA 1994).

- The introduction of industry based competencies as the foundation for curriculum development and linkages of all programs within the Australian Qualifications framework (ESFC 1992; AEC 1991; Mayer 1992; ACC 1996)
- An emphasis on transferring the location of vocational training to on-the-job and onsite delivery.
- The convergence of general and vocational education in senior secondary schools (AEC 1991; Mayer 1992).

These policy settings, and the establishment of ANTA in 1992, has fundamentally changed the financing arrangements of TAFE systems. Funds which had previously been allocated to TAFE are now subject to competitive tendering where private providers, employers and other government organisations can tender in competition with TAFE. More recently competitive pressures on TAFE have accelerated with the application of "user choice" to apprenticeship schemes which effectively allows employers to select from a range of providers. The National Competition Policy (NCP) introducing the notion of "competitive neutrality" in order to separate purchaser and provider functions has also impacted on TAFE. Owing to the NCP, TAFE systems can provide services in other states and compete against each other, and have to fully cost their own operations against other providers to achieve efficiencies in provision.

In response to this environment, TAFE has been subject to significant structural reform which has changed the role of TAFE from that of a public sector bureaucracy toward a corporate enterprise with some public sector responsibilities. (EFSC/NBEET 1991) The salient features of these changes have been:

- The corporatisation of TAFE with legislative and regulatory frameworks to conduct commercial and revenue raising activities;
- The creation of devolved Institutes of TAFE with objective of obtaining greater synergy with the needs of industry in developing a market presence for TAFE; and
- The introduction of key performance indicators related to the achievement of financial, client and commercial outcomes.
- The combination of national policy changes introducing a competitive VET system, the restructuring and reform of TAFE systems and the accelerated emphasis on technology, internationalisation and lifelong learning have significantly reshaped the interpretation of a TAFE teacher's role.

In the context of these policy changes, there has been significant research and policy discussion on the role of teachers in vocational education, on what competencies and attributes they require, and how they will acquire them. The relevance of traditional roles of technical teaching, which emerged in an industrial era, have been questioned in the context of advancing technology in the workplace and the development of associated learning environments. Recognising the dynamic external environment, Lepani (1995 & 1996) has proposed an expanded view of a teacher's role to incorporate a broader range of activities in what is termed the VET practitioner. The VET practitioner's role incorporates all or any of the following: specialist learning facilitator; knowledge management strategist;consultant to enterprises and industry; designer of multimedia learning products and services; developer of strategic partnerships; researcher; manager; communications strategist; career pathing strategist; and assessment and credentialling specialist.

According to Lepani, the VET practitioner will also be working in the context of a corporate structure emphasising self managing teams in organisations characterised by flatter management structures. In these new devolved and performance oriented work structures, Lepani has argued that teachers will be repositioned as managers and facilitators of learning in the context of a competitive and dynamic learning environment. This new environment will be typified by learning and teaching strategies which incorporate mixed mode and multimedia delivery that are customised to meet the needs of specific clients.

The identification of the associated competencies for these new roles have been identified at the national level with the formation of the National Staff Development Committee. Its two reports identified a broad range of competencies needed for the teacher and an ability to work in collaborative team focused structure (VEETAC, 1992 & 1993).

Since these early reports, the emphasis has shifted from the development of competencies to identifying attributes and capabilities that underpin them. More recently Chappell and Melville (1995) have formulated a matrix of professional competence for NSW TAFE teachers with exemplars of best practice modelling competencies and attributes. The models proposed by Chappell and Melville incorporate an integrated approach involving domains of professional practice, adult teaching and learning organisational development.

The strategies for acquiring and delivering the competencies, attributes and capabilities that the new role of the VET practitioner proposes in recent literature, differs significantly from the centralised staff development and inservice units that characterised TAFE prior to the 1990s. The emphasis is on individual planning utilising an action learning model. The draft NSW TAFE Professional Development Scheme (NSW TAFE 1996) is designed to provide a means for teachers to identify present and future roles, assess themselves against key teaching areas, develop and implement plans, review those plans, and document the development of teaching and technical competence. This is an ongoing process throughout a teachers career and which involves a broad range of activities such as: action learning sets; special projects; mentoring /shadowing; assignments; study tours; exchanges and offshore assignments; secondments and attachments; and return to industry.

The provision of professional development has been a continuing issue in the context of TAFE's changing and dynamic role. How teachers move towards the role described by Lepani and access the frameworks of professional development described in this section remains a critical question which system mangers will need to address.

The research project sought to establish a dual vectored analysis of recognition and non recognition of the issues and matters described by Lepani,(1995 1996) Chappell and Melville (1995) and described in the VEETAC (1992, 1993) documents.

Teachers' work

The research team interviewed 45 TAFE Institute staff were interviewed in the Rural Institute of TAFE (11 or 24%); large metropolitan Institute of TAFE, (17 or)38%; and A regional Institute of TAFE (17 or 38%). There were 30 males or 70%, and 15 females or 29% of all participants. The research participants could be generally be described as predominantly as fulltime teachers, permanently employed and teaching in tafe for a period over 5 years in duration.

Across the three Institutes the participants described an expanding range of tasks which had accompanied the Open Training Market. These tasks were associated with brokerage, negotiation and liaison with clients. Teachers considered that these tasks were new and were reshaping their work.

At the same time, they considered that there were demands by management in the Institute to maintain the mandatory 21 hours face to face teaching. Not only was this seen to be intensifying teachers work but also contradicting the way in which flexible delivery was reshaping the teaching task itself.

The new roles and the tensions associated with the acceptance of these roles are well summarised by the following comments:

> The roles of teachers are starting to change. We will need to liaise with industry, chase funding and customise our training to industry. Currently there are limitations on what is accepted as teachers' duties. Marketing and liaising are not accepted. They don't realise that course development work takes time... [This] necessitates a new look at what teachers do and what counts as teachers' work

> We've gone from being a senior tech to manager of major programs. I'd like to be trained in tendering, marketing, salesman and manager. My role as a teacher has changed very much towards that. Teachers have taken on the co-ordinating role

The requirement to deal with industry and the subsequent impact of competitive pressures on teachers' work is well illustrated in the following comment.

> My main job is selling. I've got to give the priority to the client

While teachers recognised these changes were happening, their ability to respond was confined by a combination of what they saw as the inappropriate application of minimum teaching teaching hours and poorly co-ordinated administrative practices which teachers were unprepared for.

> Our director won't let us breathe unless we are on 21 hours teaching

The administration load carried by teachers was considered very problematic. A number of teachers linked the administration load to a perceived reduction in the quality of the lessons delivered. The devolution of the budget process to the team and individual teachers was also regarded as a continuing intrusion of teachers' time.

> We are doing so much administration work that there is no time for preparation time.
>
> The budget is the most problematic and time consuming of all the operations in the Institute. The team compiles a budget and then the parameters for the budget change!!

Many participants argued for a more liberal interpretation of teaching hours to incorporate the roles associated with industry liaison, program negotiation and brokerage. They considered that without liberalising what constituted teachers' hours, these crucial tasks would not be done effectively.

While there is significant recognition of the impact of these changes, not all teachers welcomed nor supported them, and did not see these as the appropriate role of teachers;

> I am not interested in expanding my range of skills for other tasks, especially tendering. I would have done a business degree if I had wanted to be involved in the tendering process.... Budgeting and tendering should be done by administration.
>
> I've got the skills but I don't want to be a salesman -I want to be a teacher
>
> The pressure we're feeling is that we're supposed to go and seek out business. I am employed as a teacher. I have not been employed as a salesman. I have not been employed to go out and search for business. I don't have the time.

Some however are interested, but unsure how to go about changing their work practices to become more responsive.

> I'm aware that the pressure is on to get commercial. I'm aware that change is necessary but I don't know how to go about it. I want someone to say "what is expected of you".

The transformation required was summarised by one teacher participants as:

> Good teachers don't need to change much, only to focus and customise to the needs of the specific clients, and to focus on specific procedures.

Teachers expressed an increasing *intensification* of their own and their colleagues work loads. Participants were clearly caught in a contradictory position, with pressures to maintain traditional teaching roles and adopt new roles without any activities being deleted. The frustration and loneliness that this creates for teachers is well illustrated in the following comment.

From time to time you need additional teacher/staff. Sometimes you need five minutes to walk away from it all. We don't have the back up e.g clerical assistant, We need to plan well in advance. We tend to be a bit isolated down here. We are on our own. From time to time we get some wayward students. It would be nice for someone to back you up.

The participants were asked to identify whether the relationships they had with colleagues had changed. The responses highlighted a growing rift between those most actively involved in the Open Training Market and those who were not. An emerging *polarisation* was evident among the teaching staff. The following comments illustrates the growing tensions.

> The only people who get recognised are the TAFE teachers working at the [business centres name] training centre

The term 'dinosaurs' was invoked on a number of occasions by participants to describe staff who were resistant or uncomfortable with the changing workplace practices involved in the Open Training Market. The tension and hostility was evident within and across teams.

The tension associated with this polarisation is expressed in the following comment.

> I am sick of being squeezed and pressured. I get the feeling that the pre vocational courses are not wanted... but we need to service the community- and I'm part of the community.

A teacher who was involved in a number of commercial programs commented that:

> A change occured with my relationship with my colleagues. I think there was a bit of jealousy regarding the overtime I was collecting - The tension is still there.

Teachers reported significant changes in the way they now teach. For the most part they felt that financial, rather than pedagogical considerations have prompted the changes. The changes are mainly elements of flexible delivery, a term often used by teachers to refer to the practices of composite classes, self paced learning; and flexible delivery.

Composite classes consist of multiple groupings of students at different levels in the one subject area, or students in different subjects that have overlapping modules or even students from unrelated subjects. As well as being financially beneficial to the campus particularly in rural areas, teachers explained that composite classes had also benefited the community because more courses were made available. Responses to teaching composite classes ranged from "challenging and fun" to "there is no choice - that's the only way we get the numbers". Some teachers felt that composite classes makes it now impossible to prepare for classes. Teachers also reported resistance from some colleagues to this change to the traditional classroom setting.

Composite classes and modules written for *self paced learning* are complementary elements of flexible delivery. Teachers were uncertain about the pedagogical value of this form of delivery.

> It's become a distance education on the ground.
>
> The relationship with students has improved because you're not pushing them - they learn at their own pace. But on the other hand, some are probably not achieving as much as they would have in a classroom setting. Self paced is still experimental - don't know which is better but economics dictates self-paced.
>
> Self paced courses sometimes need to be changed to direct teaching for some students. Sometimes self paced material needs to have teacher direction in the beginning. There are some students who need active teacher involvement. Self paced doesn't suit people who are not motivated.

The uncertainty associated with the changing pattern of work was well illustrated in the discussion on *flexible delivery*. Participants saw flexible delivery in futuristic terms as something that they were poorly prepared for, even if they were in fact operating in flexible delivery mode.

> There has been no training in flexible delivery....teachers think that receipt of packages is flexible delivery.
>
> Flexible delivery is still being developed, [we are] partly hampered by current arrangements and equipment.
>
> Flexible delivery means that the teacher's role is that of resourcer and organiser. You run formal lessons when the need arises.

Some participants saw flexible delivery positively commenting that;

> Flexibility in terms of delivering programs that will suit the employer is the most important thing. Things are too rigid in TAFE.
>
> Delivery hasn't changed, [there are just] a lot more packages available. Now packages are more streamlined, refined and clear.... but you still need own knowledge of teaching and learning and content knowledge. When using the packages, [you] still require a teacher.

Some were more cynical about the motivations for the introduction of flexible delivery:

> Flexible delivery as it is defined will not result in a quality product. Flexible delivery here means setting up a room and placing a tutor in the room. It is a cost cutting measure. The client should be the focus. The pressure is to deliver your "j's [award competent] at all costs.

Flexible delivery and the accompanying increased use of contracted and short term staff was viewed as a significant impediment to a long term and systematic response to client needs.

> Without a tutor or admin support to enable you to get out to the community you "lurch from one contract to another". There is no continuity or long term relationships with the college. This makes it very difficult to respond to community needs.

Skills and capabilities needed for the 'open training market'

Participants were asked to consider what skills teachers and industry considered to be important, and to consider how they might acquire these skills.

Most participants indicated that they understood what skills and capabilities industry most valued in TAFE staff. Some participants argued that industry had unrealistic expectations of students.

> They expect us to teach students in a way that students can go into a workplace and operate in an independent way. That is a bit unrealistic.

Similarly some staff believed that industry did not know what it wants itself and and therefore could hardly be expected to know what teachers should offer it.

> People in industry ask what do we need to do?

This response identified the possibility for TAFE teachers to display educational leadership in workplace contexts. The poor level of awareness of industry was commented by a number of participants who believed that this offered the opportunity for TAFE staff to adopt a proactive advisory and steering role.

This is seen as important in the context of the following comment.

They want a quick response. Yes we can deliver, or no we can't. Industry wants answers. It's not like counselling where the job is to get the answers out of them.

In general participants identified the following issues as critically important in responding effectively to the OTM.

- familiarity with the specific needs of industry;
- knowledge of the training needs of industries;
- currency in skills and knowledge;
- up to date knowledge of new technologies;
- superior communication and interpersonnal skills;
- ability to develop engaging and motivation delivery strategies;
- ability to work "hands on" and to match industry skills;
- wide understanding of training policy and training issues.

Most participants believed they had the skills and capabilities in their teaching areas to meet the challenge of the Open Training Market but needed assistance in maintaining currency in both teaching skills and industry practice. The participants identified the need for TAFE teachers to maintain "lead" practice in terms of skills currency and best practice teaching and learning. This was considered a significant market advantage over other competitors. Participants indicated a need for the provision of training and developmental opportunities in the activities associated with commercialisation, such as marketing and negotiation outside the traditional roles of teachers.

Issues concerning the systemic and structural organisational practices associated with the internal organisation of TAFE Institutes emerged as a focus for professional development. Participants argued strongly that the achievement of superior outcomes in the context of the Open Training Market was dependent on better internal management at both the team and Institute level. The participants regarded professional development in team management as essential in encouraging a more autonomous performance oriented culture in the organisation and conveyed a sense of frustration in the current operation of teams in all Institutes. The criticism also identified a need to provide support and guidance to teams to develop the skills associated with autonomous management and the formulation of strategic direction.

Staff were also generally critical of the number and nature of professional development opportunities offered as well as the procedures for accessing them. Many staff expressed a sense of frustration about the availability of professional development and had, in many cases, undertaken professional development independently in an effort to meet their own developmental needs.

Participants responses can generally be reported in the following categories:

- technical skills
- teaching and learning skills
- team skills
- corporate direction

Teachers are acutely aware of the need to maintain currency in terms of *technical skills* and a knowledge of contemporary industry practice. Participants commented favourably on industry release programs but suggested that many staff found access to such programs difficult and intimidating.

> We as teachers tend to stay with what we know and we overdo it instead of extending ourselves to learn more and updating our technology and skills; its a security we have developed with what we know. Updating skills is important but I don't know how to get release to industry, how to pay for it ...and I wonder are we scared we'll lose our credibility if we go back to the tools.

Overall most staff believed that their trade skills maybe undergoing a collective atrophy and that Institutes needed to address the issues of mantaining industry experience and skills currency at a systemic level. The importance of this to corporate image is highlighted in this comment.

> Individually you can earn the reputation of being in touch with the world out there. Occasionally I think that sometimes they [industry] think we TAFE are not part of the real world.

As already identified, there was significant discussion by participants on the *teaching skills* associated with flexible delivery. The need for support and information on how staff might work differently were highlighted, especially the need for an increased understanding of flexible delivery and training for onsite delivery.

> There is need to recognise that there is a fundamental change in the way programs are delivered. The prevailing attitude is that a 40 hour module means 40 hours face to face with students.
>
> There is no discussion of learning styles for self paced delivery.

> There has been no training in flexible delivery. There was a seminar on flexible delivery run by Competency Based Centre at Maryborough, but that was more team management PD rather than a flexible delivery PD.
>
> They [the management] have to look at syllabus documents, the delivery. And the teachers need skills to deliver the new packages, for example flexible delivery- there is no training in doing things other than chalk and talk.

The requirement to *train and resource teams* appropriately was identified as an urgent need in all Institutes. Under the new management structures, the teams were seen as the foundation in providing a more flexible and responsive organisational culture. In the context of a flatter management structure, teams are viewed by participants as functioning as autonomous units with decision making devolved to the service delivery agents, who in TAFE's case are teachers. There was an expectation that the new Institutional structures would be provide autonomy in program development, administration and budget matters.

Participants commented that in practice this has not yet been achieved and that substantial barriers are preventing teams working in the desired autonomous mode.

These barriers were identified as: lack of training and experience in team management; poorly functioning teams; administrative impediments; and poor managerial support.

In general there is considerable support for team structures and significant optimism about the possibilities which may be generated from a more collaborative organisational climate. This support is tempered by significant cynicism about the durability of the hierarchical structures and the levels of control which characterise the traditional forms of TAFE management.

The provision of team building was indicated as an important need.

> We need PD on management for teachers in work teams.
>
> We need more interpersonal skills to ensure that teams get on well together and that they relate well to clients.

Some participants described a management 'vacuum' that has accompanied the arrival of team management and the need to resource and train staff to ensure team management moves into this vacuum.

> We don't take on team responsibilities as well as we should. We need to take up the slack between the grass roots and top management because the middle management has gone. We need professional development in how to function as a team.
>
> Team management hasn't really worked. We need leadership, we need training.

Participants repeatedly focussed on the need for *general corporate direction* - TAFE and the Institutes need to articulate a strategic plan and guidelines for operating within a competitive environment. There appears to be significant frustration about the ability of the organisation to develop and convey a direction for TAFE.

> The problem is that we don't really know the TAFE's, the Institute's strategic plans-we're not sure where we are heading.
>
> We need to look further ahead than a semester, budget wise. Uncertainty is a problem. The outlook is pessimistic. They want to get rid of permanent teachers, and they are targeting special groups to clean out. The quality product is out the door because of budgetary problems. I never feel I'm a valued member of the staff.

Without a definitive corporate vision, participants expressed concern that individual responses to working within a competitive environment would be typified by resistance, divisiveness and continued uncertainty.

A big problem is that some people are very resistant to change- some people can change quickly, others don't. We need to learn to be flexible. This is difficult with extended campuses because basic resources are now scarce- eg overhead projectors, dusters.

A reccuring theme throughout this research was the need for a systematic and coherent response to *staff development*. Several staff expressed concern that the fundamental framework for supporting staff through a period of change should emphasise a strong commitment to staff training, but there had been little priority attached to providing professional development at the Institute level. One participant commented,

> There is no cohesive plan for training staff, career development, induction programs. There needs to be a lot of effort to bring teachers along.
>
> There used to be a professional development unit in each college. Now that process has been wiped - and if staff want it they have to approach the directors personally. Staff would be more comfortable convincing a committee.

The challenge is clearly expressed in the response of one of the participants who said.

> We need professional development on pulling together better as teams; we're very good teachers but focussed on our own areas and find it difficult to see the overall global picture.

Discussion

One of the most salient findings of this research project was the extent to which the Open Training Market has polarised the teaching staff in the TAFE Institutes. The Research team were informed of and observed three broad groupings across teaching staff.

The three groups could be described in the following categories

- *Deniers and resisters*. There are staff who are largely uninvolved and detached from the Open Training Market. They are often in business units where the impact of the Open Training Market is minimal and they have not been required to make any changes to their teaching role. In this group there are also staff who have been identified by colleagues (and at times by themselves) as resistant to the type of changes required. In this group there is a mixture of denial, passivity and resistance. The group is often referred to by the term Dinosaurs. Indeed some participants referred to themselves in these terms.

  Nevertheless there is an acute awareness of the changed environment and the need to change. This awareness however, is from a survival perspective rather an appreciation that there may be a different way of working. In many cases their passivity and impotence at initiating change can be directly attributed to inadequate leadership at the team level in directing and supporting change and a reliance on the methods of direction and compliance associated with traditional hierarchical models.

  Staff members in the above group were generally in teams where the strategic planning at the team level was either weak or non existent. This group are largely conforming to the Technical Teacher model described by Lepani (1995, 1996).

- *The enthusiastic and hesitant*. This middle group have recognised the need to change and in the main have responded, or are attempting to respond to the changed environment. They are enthusiastic about the potential for change but are uncertain about how to be involved and prepared for involvement. They are both enthusiastic and hesitant.

  In some cases this group have participated in programs in a competitive context and in some cases they have enjoyed success. This group are largely accepting and compliant but as mentioned, are uncertain of how to proceed. They are aware of the areas in which they need professional development, and in some cases have accessed professional development in an ad hoc manner. They are supportive of the team concept and welcome more devolved structure. In the absence of a well defined and functioning team structure they are inclined to seek the direction and support that they believe existed in the traditional hierarchical structure.

  This group are partially incorporating aspects of the VET practitioner and the traditional roles of the TAFE teacher. They are generally conforming to the strict teaching formula mandated in the award. Their progress across the spectrum of the new roles will be determined by the extent to which the team structure facilitates and is supportive of their continued involvement in commercially focussed activities and the extent to which the interpretation of what constitutes teaching is liberalised.

Many teachers in this group highlighted a concern about the potential for a further intensification of their work. They pointed to examples of staff members who had increased their involvement in the OTM and then became overloaded.

- *The Gung Ho Whiz Kids* This group are enthusiastic and energetic participants in a competitive environment whose work patterns have undergone significant changes. This group have participated actively in the Open Training Market and are accustomed to working in a flexible and innovative manner. For the most part they see themselves as successful. But in a number of incidences their efforts have not been supported by the administrative structures. In many ways this group of teachers are stretching the organisational capabilities of TAFE institutes to respond to their initiatives. In the main this group are highly motivated individuals who have sought to change their own work practices and secure their own specialisations.

  They operate virtually independently of their teams or in close liaison with commercial services and business development units. Often their work practices are sustained on the basis of individual energy and enthusiasm outside the team organisational structure. Some participants in this group expressed concern at their ability to sustain this energy in the long term, without considerable transformation in the organisation. In general however, their work practices closely mirror those of Lepani's (1995,1996) VET practitioner.

The Research Team identified a high level of tension and in some sites hostility between these three groups with divisions between staff within teams, across teams and between staff across Institutes. The polarisation paralleled the groups described above, and would appear to militate against a coherent and unified response by TAFE Institutes to the Open Training Market.

There is however a commonality across the three groupings. Most do not have an understanding of what the work practices might look like in the context of a competitive environment.

In other words there was a clear understanding across all groups of the need to be flexible but there is a lack of understanding of what that might mean in terms of work practices and job design.

- There is no clear framework of operating principles and exemplars of how to work in the new environment.
- Staff clearly find it hard to visualise what best practice may look like in the context of a competitive training environment.
- This is not assisted by the vague understanding of the current VET and related policies and their implications as evident in the responses to questions on "user choice" and the National Competition Policy where 16% and 64% of participants did not know the content of policy.

If progress is to be made in moving towards a model resembling Lepani's VET practitioner, TAFE will need to develop strategies in human resource management and professional development which accounts for both the polarised nature of the teaching profession and the lack of awareness of models of lead practice.

Job design

There is a significant contradiction evident in the research which suggests there is an overwhelming understanding and support for a more flexible interpretation of what constitutes teaching duties but little evidence that staff are actually attempting to work in more flexible patterns. Inspite of an understanding that the traditional patterns of teaching are inadequate in the context of the Open Training Market, the traditional pattern of teaching seems to be fundamentally unaltered with face to face teaching still dominating teachers' activities.

Teachers are acutely aware of the changing roles that they are required to fulfil in the context of the Open Training Market. Attempts to transform their role are currently hindered by a number of factors. The research data suggests that staff are involved in varying but minor degrees in the new roles that are emerging as a response to a competitive environment. There is however, clear evidence that teachers time is still overwhelming allocated to teaching tasks. There are clearly strong pressures exerted by management to ensure that teachers' complete the mandatory 21 hours teaching, which in most cases refers to a face to face contact with students.

In effect the participants in this research have attempted to respond to the new demands by accumulating and adding the new tasks associated with the Open Training Market. Few have attempted to redistribute their workload and interpret teaching more flexibly. Most have attempted to do more, and in effect have extended their hours of work, working beyond the amount of hours set by the award . This "bolt on" approach to the new tasks associated with liaison, negotiation, and marketing have largely been accepted as what is required in being flexible. In the short term, this willingness to self exploit might appear to be advantageous to management and superficial evidence of a new organisational culture. However the research team identified three major drawbacks in relation to this apparent exponential increase in work hours, tasks undertaken, and intensity under which they are conducted.

- *Chronic overload and stress:* The research team found considerable evidence of stress and work related anxiety. In a total of 45 interviews a total of 6 presented in what would be normally termed a highly anxious or depressed state during the period of the interview. Three participants required assistance to regain composure. The level of stress would appear to be abnormally high and, in the opinion of the research team, a cause for concern since the participants appeared unaware of the well publicised Employee Assistance Service which provides work related counselling assistance. There would appear to be a critical need for integrating such counselling services with time and stress management courses.
- *Lack of direction:* Although there is a general acceptance of the need to work differently, there is no conceptualisation of what that work might eventually look like. The notion of flexibility and intensity are seen as features of the new work arrangements, as mentioned earlier, but there is a poor understanding of what the actual pattern and nature of work might actually consist of and the routines and work practices that may emerge from them. In the context of the range of changes associated with the Open Training Market there appears to be limited appreciation of what type of practices will be incorporated in terms of: worksite flexible delivery; facilitating roles associated with workplace assessment in context of maats; use of technology involving distance delivery; upper secondary school programs; overseas and international students; and teaching and learning issues associated with flexible delivery.
- *Survival mode*: The motivation for changes in practices were often sustained in the context of a survival mentality. The value of this as a long term strategy is limited and would need to be replaced by an ethos associated with growth, based on a realistic view of individual and organisational growth strategies. The aspects of individual development will be discussed in the final section.

There appears to be substantial support for a more liberal interpretation of what constitutes teaching in response to a competitive environment. Teachers recognise a de facto redefinition of their work practices is happening at an accelerating rate in response to the Open Training Market. The major barrier to their involvement in activities which are associated with market presence and development appears to be the adherence to teaching hours.

A number of participants had developed flexible work arrangements at the team level that appeared to be successful. These initiatives were sporadic and depend on the energy and enthusiasm of individual teachers' and were in terms of influencing the shaping of teachers work very limited.

The principle question for the TAFE system is what these new duties associated with Lepani's VET practitioner may be and how is the performance of these duties evaluated. In other words what are teachers likely to be doing when they are involved in such activities as negotiating and liaison and what would the performance indicators be to establish that the work was being conducted ?

Flexible delivery

Aside from the polarisation of the teaching profession and the uncertainty about work practices, the most significant issue emerging from the research were the tensions and uncertainties associated with the practice and theory of flexible delivery. The participants were uncertain about what constituted flexible delivery, the motivations for its introduction and the effectiveness of the teachers in meeting student needs.

In all Institutes, flexible delivery was evident in a range of formats and structures across a range of teaching units.

In identifying what might constitute a generic flexible delivery program, participants have identified several elements. They were seen as any of the following:

- applicable to a range of students and a range of abilities
- acknowledgment of different learning strategies
- working with computer technology
- application of different learning environments
- customisation to client needs
- flexible entry and exit points
- self paced print material
- varied ability groups
- individualised and group instructional techniques

While there was an understanding of what constituted the elements of flexible learning, there was uncertainty about what the teacher's role in the process might be. Teachers seemed uncertain and threatened by its introduction suggesting that their role in determining the nature of the learning experience was in some way reduced or minimised. Clearly there was a sense of a loss of control as other modes of learning were applied other than traditional techniques. Similarly the relationship between teachers and workplace assessors and mentors in relation to worksite learning appeared as areas where teachers were uncertain about their future role.

While there has been some training in this area, the research identified a lack of awareness of theoretical framework that links adult learners and flexible delivery. Participants were in many cases unable to identify that flexible delivery incorporates a move from traditional group based learning techniques to negotiated individualised learning contexts. The failure to make this connection is crucial because the learning focus of flexible delivery is directed to the client level which is an an important aspect of competing in the Open Training Market.

There was evidence gathered in the course of the research that the repertoires of learning theories associated with individualised learning are not well appreciated. The transition from teaching to facilitation needs to be underpinned with a theoretical understanding of self directed learner centred models of adult learning.

In order to fully exploit the adadvantages of flexible delivery teaching staff will need to be equipped with the theories and practice associated with:

- reflective practice
- discovery learning
- problem based learnin
- experiential learning

Without this fundamental theoretical foundation to inform the practice associated with flexible delivery, there is the danger as observed by the Research Team that flexible delivery will lack structure, pattern and relevance for the learner and that teachers may be viewed as detached and remote to the learning process.

There is a fundamental issue about how the questions of theory and practice are to be addressed in the context of flexible delivery. There is clearly a need for a range of options in generating a context for professional development which accounts for the broad range of settings that staff work in within teams, across institutions and across the organisation generally. The provision of quality teaching and learning environments with well qualified staff have been identified as a major market advantage of TAFE. Adequate professional development is required to preserve this.

The provision of professional development is required simultaneously at the Institute and central level. It was suggested that several options be taken up, including short courses possibly offered and developed in consultation with higher education, and the establishment of a forum, newsletter and discussion group or email group on flexible learning within Institutes.

These options are traditional responses which are restricted to teaching and learning. In the context of rapidly changing job expectations and the critical need to address job redesign, it is perhaps more valuable to locate the teaching and learning strategies within the wider background of job redesign.

One suggestion is the use of an award system to identify instances of lead practice that demonstrate initiatives by teachers in meeting the challenges of flexible learning. The work of these teachers would act as a system wide "beacon" signposting possibilities for teachers job redesign. This may involve:

- presentation of a teaching excellence award.
- recognition within the system.
- publication of details of work practices and teaching philosophies.
- recognition as a teaching mentor with scope to visit and advise other teachers.

Note: Further details on the professional development strategies suggested in the report may be obtained from the authors

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Professional development in VET: How significant is it in today's policy context?

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This paper contends that professional development is very significant in today's policy context. The pace of national change has been so hectic that vocational education and training (VET) practitioners are finding it difficult to cope with the increasing complexity, ambiguity and uncertainty of their working world. In this climate, it is crucial that VET practitioners have access to, and utilise, professional development to help them in the process of adjustment.

The content of this paper is derived from research undertaken for the Australian National Training Authority (ANTA) by the National Centre for Vocational Education Research (NCVER) and Centre for Research in Education Equity and Work (CREEW) during the first half of 1997.

Background to the research

It is clear that processes such as devolution, decentralisation, changing employment patterns to favour casual and part time staff and an increasing emphasis on performance in organisations have influenced approaches to professional development (for example MAB-MAIC 1992, Holland 1994). Professional development of staff is increasingly viewed as a shared responsibility between individuals and their manager / supervisor rather than the sole providence of a centralised training unit.

There is a strong move away from *ad hoc*, 'one-off' training courses to a more strategic and integrated approach where professional development is seen as serving two functions – contributing to the broader human resource functions of the organisation and meeting the individual development needs of staff. These individual development needs are often more closely aligned with staff training to learn new and innovative ways of working rather than for promotion (which was often a motivating factor for undertaking training and development activities in the past).

In adopting this strategic approach to professional development, studies have revealed some consensus around the key factors that contribute to the success of these processes (for example Dalmau in MAB-MAIC 1992, Harris 1992, Routh 1993, Schaafsma 1995). These include:

- the importance of a strong commitment to professional development from chief executives / managers. This was seen to influence how staff perceived the value of professional development. Additionally, if this involvement occurred, it was more likely that decisions about training and development would be considered in the light of corporate objectives and decisions;
- the linking of training to corporate objectives;
- the active participation of staff in developing human resource development plans. This was seen to be of particular importance in smaller organisations;
- the need for training based on some form of needs assessment;
- the importance of processes which enhanced collaboration between staff;
- the acknowledgment that professional development is a process that builds on existing knowledge and skills of staff, and

- the need for flexible and individualised processes which discourage the view of professional development as indoctrination, in contrast to a process which 'facilitates creative learning effort' (Harris 1992).

Since the advent of training reforms to the VET sector a number of staff development initiatives have been developed at both the state and federal level as mechanisms to close the perceived gap between existing levels of knowledge and skill held by VET practitioners and those required to implement the reforms. Examples of these programs include: Implementing CBT, CBT in Action, AVTS Professional Development, National Transition Program, various National Staff Development Committee (NSDC) initiatives and, more recently, *Framing the Future*. Many of these programs have been the subject of evaluation studies (for example Harris 1993, Radcliffe 1994, Australian Competency Research Centre & Barton Institute of TAFE 1995, Kelleher and Murray 1996).

Most of the early professional development initiatives focused on awareness raising and skill development. "train-the-trainer" types models predominated. Generally evaluations revealed that these approaches were too generic and having limited impact. More importantly these approaches to staff development focused primarily on the job that needed to be done at the time. This approach carried with it the danger that VET staff would become skilled and competent, but with yesterday's skills. Additionally, these approaches paid limited attention to the process of change and did not address the personal needs, fears and anxieties of staff involved in a change process which was (and still is) notable for its pace and scope (Simons & Harris 1997).

Since the mid 1990's action learning approaches have largely become the model of choice to underpin professional development activities for VET staff. Recent evaluations show the potential of this model to produce a greater impact on organisational change and participant development (Kelleher & Murray 1996). Issues with this approach still remain however, including its ability to target only relatively small numbers of VET staff, the limiting of the impact of professional development to localised sites (Boydell & Leary 1996); the time needed for staff to adjust to the methodology; the availability of expert facilitators and the lack of suitability of the method to certain learning styles (in particular the difficulties reported by Aboriginal and Torres Strait Islander groups (Perkins 1997).

More recent literature has argued for the development of new models of professional development that offer a reconceptualisation of the nature of professional development. Hill and Sims (1997) argue that professional development for educators needs to embrace the development of educators at the professional, personal and general levels. It needs to provide educative experiences which are not restricted to specific current or future roles thus acknowledging the reality that the nature of work is in a state of considerable change.

The management of change and the strategic use of professional development presents a significant challenge to the contemporary VET organisation. The literature does not reveal "recipes" for success but rather sets of often overlapping concepts which emphasis the importance of integrated approaches to planning professional development which give equal value to both organisational and individual staff aspirations, concerns and needs in an environment that fosters collaboration and collegiality. In other words, the strategic use of professional development necessitates equal attention be paid to both the technical as well as the human dimension of training and development, underpinned by a well developed understanding of the processes of change and innovation.

Research focus and methods

The primary objective of the research study was to examine how selected organisations had used professional development strategically in support of implementing VET policies. This research focus required that professional development practices be explored in some depth and for this reason a case study methodology was selected as being the most appropriate. In consultation and discussions with VET managers in each State/Territory ten case study sites were selected for inclusion in the study.

Data were mainly collected from four types of participants at each site - the key initiator of the change, those affected by the change, a team leader or departmental manager, and the person in the organisation responsible for professional development. This was to obtain multiple perspectives on the change implementation. At each site data were collected on the nature of the change being undertaken within the organisation and the role and nature of professional development initiated to support the change process.

What were the changes? Four of the changes related to various aspects of flexible delivery - in engineering, accounting and book-keeping, small business, and at one institute across four main areas comprising landcare, agribusiness, human services, and business and information technology. The other changes were concerned with retail training in the school sector, recognition of prior learning in Skillshare providers, cultural shift from classroom teaching to consultancy services, frontline management in TAFE and industry, broadened access to information technology services, and competency-based training and assessment in languages.

These changes were variously labelled by interviewers or implementers as 'radical … and a major cultural change', 'enormous', 'dramatic and [involving] every person in the institution', 'innovative' and 'very significant'.

The role of professional development in supporting change

Professional development in supporting change at the case study sites was described as 'integral', 'central', 'pivotal' and 'critical' to the success of the change initiative. At one organisation, professional development was integral to the change in that it was used to both up-skill teaching staff and refine learning materials. Another found that professional development encouraged networking with other providers, injected new and lateral thinking, facilitated exchange of information, personal growth, curriculum and technological development and a sense of ownership.

Another professional development program was reported as "pivotal to the successful introduction of VET in schools". Managers and teachers at a different organisation considered that, without professional development, professional and team support would have been seriously lacking and the likely outcome only limited resource development and changed delivery practices. On reflection, they believed that the role of professional development in supporting change "had to be given greater prominence - particularly at the level of team involvement in the management of the change process". It was considered essential not just for teachers but also for students and clients.

These statements from participants underline the critical importance of professional development as *a general supporter of change*. More specifically, professional development can be perceived as playing a number of particular roles. Most immediately and visibly, it serves as *an information dispenser and skills developer*. It builds knowledge about a particular change and equips relevant others with the specific skills required for implementation of that change.

In addition to this training function, professional development also acted as *a barometer* for change implementation. Professional development provided the feedback to allow necessary adjustments to be made to the change itself. At one institute, funding of student contact hours had to be reconsidered and eventually broken down to a project basis, and staff numbers and allocation needed attention. This feedback also enabled needs that had not been initially understood to be clarified and shifts made.

Professional development also served as a *kickstart*. Major mind-shifts often have to occur prior to progress towards any change. People also respond to change at different rates. Professional development activities were used to confirm those who were ready to act and who could pilot change.

It also acted as *a safety valve*. Professional development activities were used to attend to major anxieties and concerns felt by individuals before change began. Cultural shifts and moves out of comfort zones can be very stressful, as many institutions discovered.

Professional development was used as an *identifier*, singling out latent talents and abilities in staff, who were then co-opted or released to carry out particular tasks in a change management process. For example, at one organisation, a teacher was co-opted to refine assessment tasks developed by colleagues, and her role was considered "a vital element in the successful implementation of the Certificates in Spoken and Written English". In another it also provided a means of tapping into talents and energies - staff "were doing, not just being told" and in consequence, "thrived on the process".

Very importantly, professional development served as *a team builder*, helping to create and maintain climates conducive to change. One institute claimed the positive outcomes to be "assisted by the professional development component and the sense of ownership engendered by the staff's active involvement in the change development". "Tailored professional development" was reported as an important factor in their success. The development of a close and supportive team at another institute assisted staff to achieve their goals and was "seen as being essential to the success of any similar program".

In all of the case studies, professional development was considered a very important factor in the change process, fulfilling many roles and contributing to the effective implementation of each change. Professional development was one of five critical factors identified in the change process, along with the 'right person' as catalyst/change agent, willing others with a shared vision, adequate resources and supportive environment.

While some sites may have under-estimated or missed particular aspects such as resources, time or local manager awareness, in all cases there was the realisation that professional development was a fundamental ingredient.

Types of professional development

Three important dimensions to professional development can be identified from the analyses of the case studies. These dimensions are not discrete, but are in many respects inter-related. They help to disentangle and clarify various facets of professional development that may or may not be appropriate in particular contexts.

Firstly, professional development may located on a continuum from *integrated* to *separated*. Integrated professional development is woven into the fabric of the normal working life of a department or organisation, where professional development is viewed as authentic work activity and valued as 'real work'. It is somewhat invisible, being relatively indistinguishable from regular work activity, it is on-the-job and continuous, and it is melded into the normal processes of continuous improvement. Separated professional development, on the other hand, typically involves special workshops and other similar types of activity. It tends to be off-the-job, and normally though not exclusively timed prior to tasks rather than during them. By definition, it is discrete and divorced physically from regular work activity.

Secondly, professional development may be perceived as being on a continuum from *group responsibility* to *individual responsibility*. Professional development may be organised for or by an identified group who are seen to be integral to a proposed change. All members of that group have a responsibility to participate. Such activities tend to be relatively formal, planned and structured. Alternatively, professional development may be left to individuals as their own responsibility. Development may be in-house or it may occur elsewhere such as a university. The organisation hosting the change plays much less of a role in the specific direction and provision of the professional development.

Thirdly, professional development may be on a continuum from *tailored* to *generic*. In this study most of the examples were tailored, and this characteristic was deemed one of the main factors in its success. Tailored professional development is deliberately structured for a specific purpose and with a particular audience in mind. Generic professional development is more general development for more general trends, and relies on the ability to read the environmental signs, to think strategically and to answer such questions as 'How do we develop people for this changed environment?' rather than 'What specific development is required for this particular innovation?'

From these different dimensions, then, we can construct four main types of professional development that have been employed by VET managers. Each type was judged by site participants as effective within the context in which it was employed. The decision as to which to use in any particular context depends on such factors as the context in which the change is to be made, the nature of the change, the resources available and the preferences of the change agent(s). The following are some examples of these types.

1. *Just-as-planned*

In one organisation, the Managing Director had a well prepared plan for change, and so professional development was targeted mainly at developing the skills that would enable people to function effectively in teams.

Possible advantages: structured in advance; others can know what is to happen; potential problems may be anticipated; costs can be anticipated

Possible disadvantages: may be ill-timed and therefore not strategic; may not meet needs-of-the-time; can be locked in too far in advance; may be inflexible; may not be 'owned' by staff, depending on how the needs were identified.

2. *Just-in-case*

At this institute and private company, professional development for moving people out of the classroom and preparing them to deliver training in workplaces was the critical key change. This was prepared for well in advance of a specific initiative and was derived from a critical awareness of key trends and emerging issues in policy development within the VET sector.

Possible advantages: a natural progression, not a quantum leap to a new change; people prepared in advance

Possible disadvantages: may not be what is required, or out-of-date, when the need for a change arrives; may have to convince staff that the need actually exists; staff can move and therefore not be available when eventually needed; can be inefficient.

3. *Just-in-time*

This organisation established a network of staff to provide professional development support to other staff as they identified their need for such development. This often occurred in a fairly immediate way, where a staff member was able to access required knowledge and skill from a colleague at the point and time that they needed them.

Possible advantages: meets immediate need at the place and time required; very efficient; flexible; assistance is individualised

Possible disadvantages: need for professional development mentor to be at hand when required; can be utilised disproportionately or monopolised by some; those wanting assistance can be left waiting if professional development is devolved down to the workers and they have other tasks at hand.

4. *Just-for-me*

This model was in evidence at an institute where no formal planning documents were produced and there was little formal planning for professional development as staff were empowered to make their own decisions about all aspects of their work. It was also seen at the first organisation in the initial stages when staff could nominate themselves for any of various professional development courses conducted for people working in the VET sector.

Possible advantages: stimulates initiative and self-responsibility; good for staff morale to have freedom of choice; meets individual need (provided course is directly relevant and sufficiently specific); cheaper for the organisation; less responsibility for management.

Possible disadvantages: not necessarily targeted towards organisational needs; potential to be used by some and ignored by others.

The strategic use of professional development

Analysis of the case studies leads to the following conclusions on the strategic use of professional development:

- professional development needs to be seen as an essential and integral component of effective change.
- professional development needs to be inclusive, with all possible stakeholders considered.
- professional development needs to promote team-based approaches, as teams can provide crucial support mechanisms during the stresses and strains of change. professional development needs to build on informal networks where they already exist.
- professional development needs to be in some way linked with participants' past experiences, with previous knowledge and experience valued and used in the professional development process.
- professional development needs to be practical and purposeful, relevant to the change and enable participants to feel they have some ownership/control over the change process.
- professional development needs to consider the feelings and attitudes of participants, and value these equally as importantly as the development of skills and knowledge.
- professional development needs to be "just enough". Too much professional development may lead to boredom, impatience to "get on with the job", and over-preparedness with the possibility of insufficient opportunity to utilise the new-found expertise, while too little professional development may lead to under-preparedness in knowledge and skill, incomplete commitment to change, frustration, resentment and resistance.
- professional development needs to be planned so as to anticipate likely difficulties/inhibitors and specifically to meet them. They should not be glossed over, under-estimated or denied.
- professional development needs to recognise that change is stressful and creates pressures for those involved in change as they move outside of their comfort zones.
- professional development needs to create and foster a supportive and mentoring climate that is conducive to change and will facilitate innovation.

The provision of meaningful professional development within the current VET climate is a challenge. It is a challenge because it is largely the national policy context that determines professional development, and yet that policy context is rapidly changing. VET practitioners find themselves running the gauntlet of many professional development activities on matters which increasingly appear to be 'flavour of the month fads'. In this situation, they can quickly become change weary and, worse, cynical about these changes 'of the moment'. While there are professional development initiatives being implemented like 'Framing the Future' and other action learning models, the jury is probably still deliberating their long term effectiveness in fostering and supporting change and innovation across a wide range of VET contexts.

One ponders whether it is time for a greater focus on educating practitioners to develop themselves as people and to be equipped to manage change in general rather than training them to implement particular policy objectives that are perceived as constantly shifting in the quicksands of government (and big business?) ideology. The demise of the National Staff Development Committee does not appear to be an initiative designed to foster confidence that professional development will remain high on political agendas. Nor does the rapid shift (albeit due mainly to resource constraints) towards in-house, just-in-time activities on specific aspects, and away from longer-term, externally-provided activities on broader concerns, appear to be conducive to greater emphasis being posited on professional development.

The limitation of the skill base within VET undoubtedly affected the implementation of earlier VET policies and will similarly impact on the extent and quality of current policy implementation. While there are examples of effective professional development approaches using work-based and action-learning methods, the pursuit of comprehensive and effective professional development strategies aimed at strengthening the skill base of the VET system remains a priority issue.

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Learning to change, changing to learn. Stages of concern in the implementation of competency-based training

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A study into the effects of competency-based training (CBT) and recognition of prior learning (RPL) was recently undertaken by Charles Sturt University's Group for Research in Employment and Training (Smith et al, 1997). The study, funded by the Research Advisory Committee of the Australian National Training Authority (ANTA) was designed to investigate the effects of these two innovations upon teaching and learning. Although there has been much debate about the introduction particularly of CBT into vocational education and training (VET), there has been little empirical research into its effects. One reason for this may have been the intense and sometimes acrimonious arguments about CBT and its desirability (see Smith & Keating, 1997: 112-120). In such a climate it has not been easy to examine the actual effects of CBT.

The ANTARAC study offered the opportunity to look at these effects across the whole VET sector, and a number of findings are documented in the report Making a difference? How competency-based training has changed teaching and learning (Smith et al, 1997). This paper will report upon the reactions of teachers to the introduction of CBT, as revealed in a questionnaire designed to investigate their current concerns about the innovation. The paper argues that the effects of CBT on practitioners have varied according to a number of factors, especially the manner in which CBT was introduced by their organisations and whether appropriate staff development was provided.

Competency-based training

The VET sector has undergone considerable change over the past decade. Perhaps the two major changes have been the introduction of CBT as the preferred method of design and delivery of courses, and the opening of the training market to competition. Both of these changes have had considerable effects upon teachers as they have struggled to make sense of changing policy imperatives, often with insufficient access to information.

A particular problem with relation to CBT has been the lack of a shared understanding of its nature. A commonly-accepted definition has been:

> Training geared to the attainment and demonstration of skills to meet industry-specified standards rather than to an individuals' achievement relative to that of others in a group (VEETAC, 1992, 5-8)

Many other elements have been incorporated into providers' and teachers' own understanding of CBT, however, with different opinions as to what are 'essential' and what are 'implied' characteristics of CBT (Elam, in Tuxworth 1989:15). A 1990 study of CBT in TAFE (Thomson et al, 1990) suggested that three out of a list of seven characteristics qualified a course as CBT; whilst a later study (Smith et al, 1996) of the whole of the VET sector suggested a three-level classification of CBT courses. The latter study found a move in courses accredited since 1992 (when the national Framework for the Recognition of Training - NFROT - was instituted) towards more CBT characteristics. The introduction of more CBT characteristics - such as assessment on demand or in the workplace - was found to depend on several factors: institutional factors, industry area, nature of the course and nature of the student group. Because of the nature of the 1996 study, which was in effect a national census of VET courses, no investigation could be made into how CBT was implemented in the classroom and training room. It was suspected, however, that individual teachers' agency would have a major effect upon how CBT was actually utilised.

The Making a difference study offered an opportunity to examine this question. Because of the debate about the meaning of CBT, no single definition was utilised in the Making a difference study. Instead a list of fourteen characteristics was derived from the literature and from previous studies (Table 1). To be included in the study, courses needed to exhibit all of the first five characteristics and at least two of the remaining nine.

Table 1: CBT features in the Making a difference study

Course based on industry competency standards
Course documentation in CBT format
Industry involved in course monitoring
Recognition of prior learning (RPL) is available
Assessment is criterion referenced not norm referenced
Assessment on demand
Assessment at least partly in the workplace whilst working
Modular format with separate learning outcomes for each module
Assessment is based on competency standards
Assessment is based on demonstration of skills
Non-graded assessment
Assessment criteria are made public to students
Flexible entry and exit to courses
Training involves doing as well as watching

The effects of CBT upon teachers' roles

It is generally believed that CBT has had a considerable effect upon the role of VET teachers and trainers, although this belief has not been matched by a comparable amount of empirical research. It is generally held that, under CBT, a teachers becomes less of an 'up-front' information giver and more of a 'facilitator of learning'. Harris et al (1995: 270-271) list the following roles of a CBT 'resource person (who) facilitates learning:

- liaison person
- adviser
- mentor
- facilitator
- information dispenser/skills demonstrator
- assessor
- materials developer and
- evaluator

Although the nature of the word 'facilitator' has been challenged (eg Tooth, 1993) a more important issue is perhaps whether 'facilitator' is a smaller or greater role than 'teacher'. The above list seems to imply, by its length, an expanded role, but some studies (eg Robinson, 1993) have found teachers complaining that their role has narrowed. Cornford (1996) found that teachers were pessimistic about the results achieved by their students under CBT, implying that these teachers were unhappy about the teaching role they were being expected to fulfil. Simons (1996) and Smith & Nangle, 1995) found teachers unhappy with the CBT curriculum documents with which they were expected to work. These teachers felt that the additional preparation of teaching materials required by minimalist CBT curriculum was something they should not have to do.

One point on which most commentators agree is the need for effective staff development to underpin the introduction of CBT. This was generally found to be absent or inadequate (Smith et al, 1996) and confined to 'big-picture' issues, often confusing CBT with more general training reform matters. The lack of attention seemingly paid to staff development was despite early calls for its institution (Thomson et al, 1990:33), and warnings that teachers may be uncomfortable with the new role of 'resource person' (Hobart & Harris, 1980). Although some staff development projects such as the National Staff Development Committee (NSDC) action learning 'CBT in Action' program (Kelleher & Murray, 1996) had enjoyed success, their effects were limited to certain groups of VET practitioners, whereas there was a widespread need for training in the most basic and practical aspects of using CBT (Choy et al, 1996).

A major difficulty for practitioners in their response to innovation is that they inevitably become novices to some extent, to 'bear the burden of incompetence' (Stenhouse, 1975). For teachers and trainers, this burden is particularly difficult to bear as they are accustomed in their role to having power, over students and trainees (Denscombe, 1985, Mulcahy, 1994) and also to working largely in isolation from other practitioners (Hargreaves, 1994:169). Having power means that they are unused to being in a situation where they are unsure and might make mistakes, and working in isolation means that they may be unable to seek support from other practitioners. The introduction of CBT means radical change in every aspect of their work: new curricula, new delivery methods, a close relationship with industry and changed teaching interactions. Stenhouse (1975) maintains that practitioners are not satisfied until they are doing things at least as well as they did before; and in view of the many changes associated with CBT this could be expected to take a long time.

Research method

The literature review suggests both a radical change in teachers' roles under CBT and a dissatisfaction of teachers with that changed role and with the support they have received in order to cope with it. It was expected therefore that a large amount of time would be spent during the research in talking in depth with teachers, both individually and in groups. The research covered thirty-six VET courses spread across the whole of Australia and across types of provider (public and private) and three main industry areas. The industry areas were building and architecture; business and office administration; and engineering including automotive. Twelve of these courses were studied through intensive case studies over a two-day period, involving observations and interviews with all stakeholders, and twenty-four by telephone interview with teachers involved in the courses.

In order to capture teachers' responses to the innovation of CBT, a 'Stages of concern' questionnaire was devised for the study. This questionnaire was designed to reveal how teachers had worked through various concerns about CBT, beginning with concerns about what the innovation meant for them personally in terms of their satisfaction in their day-to-day work. Subsequent concerns were expected to focus upon how to develop effective ways of handling the innovation and concern for its longer-term impact. Whilst staff development about CBT was generally focussed on its end product or longer-term impact - upon the often loosely defined role of CBT in making training more responsive to industry and more efficient in its production of skilled workers - teachers and trainers had to often work out for themselves how to use CBT in their work. Thus the stages of concern questionnaire could be expected to yield interesting indications of how practitioners coped with this anomaly.

The questionnaire was derived from the work of Hall and his colleagues at the University of Texas. Hall identified stages of concern which were common across a number of innovations (Duke, 1993). The stage of concern of an individual highlights those parts of practice which cause him or her anxiety. The questionnaire used in the study was based on an instrument devised by Borich (1993). A copy can be found at Appendix 1. The main function of the questionnaire was to establish whether teachers' concerns were with 'self', 'task' or 'impact'. The expectation would normally be that, as the innovation (in this case, CBT) becomes more firmly established within an organisation, teachers' concerns would shift from a focus on self to a focus on the task and then to its impact. The teachers and trainers were able to choose between four responses for each item in the questionnaire: 'not concerned', 'a little concerned', 'moderately concerned' and 'very concerned'.

Three points were allocated for 'very concerned', two for 'moderately concerned', and one for 'a little concerned'. Eight of the twenty-four questions related to 'self concerns', eight to 'task concerns' and eight to 'impact concerns'. The maximum score for each of the three sections (self, task and impact) was 24. This would be achieved if the respondent was 'very concerned' about all eight questions in that section.

The questionnaire was administered in seven out of the twelve case studies, in each case to between five and eight teachers. The seven instances included six TAFE colleges and one defence force provider. The following table describes the courses in which the teachers were involved.

Table 2: VET courses for which the 'Stages of Concern' questionnaire was administered

Provider name	Type of provider	Course	AQF level	Industry area
Box Hill College of TAFE, Melbourne, Vic	TAFE	Certificate in Motor Mechanics (General Stream)	III	Engineering
Kangan Institute of TAFE, Hume Campus, Melbourne, Vic	TAFE	Certificate in Office Administration	III	Business
Mackay College of TAFE, Qld	TAFE	Certificate in Office Administration	III	Business
Petersham College of TAFE, Sydney, NSW	TAFE	Certificate in Engineering (Electrical)	III	Engineering
RAAF School of Technical Training, Wagga Wagga, NSW	Enterprise	Avionic Mechanics Aircraft Mechanics	III	Engineering
Torrens Valley Institute of TAFE, Adelaide, SA	TAFE	Diploma of Building Design/Design & Drafting	V	Building
Wollongong College of TAFE, NSW	TAFE	Certificate in Carpentry and Joinery, Stages 1&2	III	Building

In the subsequent discussion, responses will be referred to by the name of the provider. The responses, however, refer only to teachers involved in the course named above, and should not be taken to imply any conclusions about the provider in general or its other courses.

Table 3: Concerns about teaching and learning in CBT: Responses to the 'Stages of concern' questionnaire

	Stages of concern - group averages		
Provider	Self	Task	Impact
Mackay College of TAFE	6.4	9.4	11.2
Box Hill College of TAFE	7.8	10.9	7.0
Kangan Institute of TAFE	9.2	10.8	16.2
Wollongong College of TAFE	10.2	14.6	17.6
Torrens Valley Institute of TAFE	13.2	14.3	15.1
Petersham College of TAFE	15.0	17.0	17.0
RAAF School of Technical Training	16.6	16.4	18.6

The findings of the 'Stages of concern' questionnaire

The findings revealed some significant differences between the groups of teachers (Table 3). Teachers at Mackay, Kangan and Box Hill TAFE colleges showed the lowest scores in their responses. They showed higher levels of concern with task and, generally, with impact questions, suggesting that they had moved beyond initial concerns about their own ability to cope with CBT to concern about how to implement it properly and its possible effect upon student outcomes. The case studies revealed some possible reasons for the nature of concerns of teachers.

Box Hill had begun to use some CBT features in the automotive courses from 1978 with the rest of the college following suit from around 1990. The automotive courses had been using self-paced delivery methods for many years, with flexible entry and exit into the courses and assessment on demand. Box Hill teachers' low level of concern about 'impact' suggested that because of the longevity of the innovation, they were satisfied that student outcomes were satisfactory. They still, however, had some 'task' concerns, suggesting that some of them were not entirely happy with the teaching-learning process under CBT. Some of the comments by teachers in interview revealed these concerns:

> Students relate well to staff but there is (now) not much time to get to know them well
>
> ... miss (traditional) teaching which is impossible when you deal with different levels and modules
>
> I now spend 50 per cent of my time assessing (instead of teaching)
>
> ... you mostly have to work with individuals and pairs of students and this means you have to repeat the same things over and over - very tiring.
>
> Assessing students has become a bottleneck in the system
>
> Some staff also feel they have no time to do some things they would like to do because students are always needing attention
>
> The course is now not conceived of as having a broad framework but is decontextualised and fragmented.

However, other comments indicated an acceptance of CBT and of the changes it had brought to their role.

Kangan TAFE began implementing CBT in 1990 in trade courses, and other areas followed gradually. Although the Office Administration course was not fully CBT until 1994, some CBT features were utilised previously. The higher scores for impact and task than for self imply that, on the whole, teachers were not particularly worried about how they themselves coped with CBT but more with its effect upon students. This concern was reflected in the fact that staff had developed their teaching methods to suit their students. Self-pacing was used only later in the course and new students were taught in classes. The teachers found that this pattern suited their student population, with a significant number of recent school-leavers and also a high NESB component. In addition, special strategies had been devised for certain groups of students, such as a number of students with disabilities.

The importance of staff development

The findings illustrate the importance of effective staff development in the smooth implementation of CBT. Mackay TAFE is the outstanding example here. While the Mackay course had not been CBT for long (since 1995), staff development in CBT had pre-dated the implementation of CBT. Utilising a National Staff Development Committee CBT grant, the college closed for a day in late 1994 for staff development in CBT, which was undertaken in teams which mixed staff from different departments, in an attempt to prevent reinforcement of inappropriate practices and attitudes. A visit was also made by two staff from the Office Administration Section to Tea Tree Gully TAFE in South Australia, to investigate the mechanics of self-pacing with a view to implementing it at Mackay. Perhaps because of this thorough staff development, teachers had low levels of 'self' concern although they still had some concerns about the teaching-learning process in their self-paced type of CBT, and also about whether graduating students had all the skills required by industry.

Kangan TAFE, too, had devoted considerable resources to staff development in CBT, and continued to do so. The Institute had a target of three staff development activities each year for each member of staff, and in 1996 the average staff development time received was 29 hours. Training about teaching with CBT formed a large part of the staff development.

At Petersham TAFE, on the other hand, where concerns were high on all three indices, staff development in CBT was minimal. The teachers themselves said they found it difficult to attend staff development activities because they were run at times when they were teaching. The result of insufficient staff development was that, as one teacher said, 'We're always behind'. Their learning about CBT appeared to come from university courses which one member of staff was attending and from informal discussions amongst themselves. The Staff Development Officer at the Institute where Petersham was located echoed these comments, stating that the staff development which had been offered was not well supported as staff appeared to think CBT was only a passing fad. She felt that only staff threatened by competition from other providers were interested in such development.

Another instance of lower levels of staff development in CBT was Torrens Valley TAFE, whose teachers also exhibited reasonably high levels of concern, at least in 'self' and 'task' areas. The staff had been involved in one two-day workshop on CBT, although one teacher had received no staff development in CBT. It seemed from the teachers' interview responses that many were still engaged in the, perhaps fruitless, activity of questioning whether CBT was 'a good thing':

> We are de-skilling by using CBT
>
> These students are never going to have the broader knowledge in CBT that past students
>
> Students will have narrow competencies.
>
> These types of comments were matched by a number of comments about the implementation of CBT
>
> It was thrown at us without consultation or rational explanation
>
> It has been seen as an imposition
>
> The learning curve has been very steep. The process has been wrong. We have had no chance to consolidate.

And, interestingly:

> It seemed that it was accepted as a good idea. If it was such a good idea, then we should have been given greater explanations about "why"? We were told "how to". The "why" would have helped the implementation.

The latter comment is at odds with most criticisms of CBT staff development. Generally, it is suggested that staff development focuses too much on 'big picture' issues and not enough on how to implement CBT. In this case, however, this group of teachers appeared to need time to discuss whether CBT was a good thing before they could move onto implementation issues. This could well have been a function of the fact that their course was an AQF Level 5 course and that they felt CBT was inappropriate for such a high-level course. The implication here is that there is no correct uniform method of staff development for CBT but that each group of teachers may have different needs. This is obviously a factor behind the 'CBT in Action' program but the latter has the disadvantage of only reaching certain self-nominating groups of practitioners.

Other factors affecting responses to CBT

As with any innovation, some factors specific to certain cases affected the implementation of CBT and practitioners' responses to it. At Wollongong TAFE, for instance, the building teachers had high levels of concern with 'task' and 'impact'. Their department was, at the time, attempting to implement CBT with inadequate physical resources; a new building was being constructed which would enable all-weather practical work and better integration of theory and practical work, which teachers saw as being essential to the successful implementation of CBT. In the meantime, however, they were struggling with existing resources. The teachers' high score on 'impact' reflected concerns they expressed about student outcomes. Some of the teachers felt that the new CBT course was inferior to the old course: 'Some of the builders just shake their heads'. Others, however, were happy with the new curriculum. A common concern, however, was with competition from non-TAFE providers, and this may have underpinned their high 'impact' concern; presumably they believe that good student outcomes were essential to the continued success of their courses.

The RAAF School of Technical Training teachers displayed high levels of concern in all areas, again reflecting particular circumstances. Their concern with their own performance appeared to reflect concerns over their self-image, with the question "Am I a fully-qualified instructor in this new framework or do I need re-training?" and with peer status, especially as it affected promotion prospects, which are always important in the armed services. Some of the teachers were only posted into instructional duties for short period of time, and may not have been confident in their overall teaching abilities, let alone their ability to cope with CBT. Two other issues probably helped to increase their concerns. Firstly, the course was fairly new (1995) and had been instituted as part of the RAAF Trade Restructure and this created some confusion. Secondly, there was a high level of concern with assessment, particularly with the issue of lasting competence and with the lack of grading in the RAAF version of CBT, and this seemed to be related with the importance of assessment for the trainees and their future careers.

At Petersham TAFE, concerns were also high across all areas. It seemed that teachers had never been convinced of the advantages of CBT. They had from the beginning had specific concerns, for instance about modularisation, about non-graded assessment (which they felt did not give enough information to the employers with whom they had a close relationship) and about lack of consistency of the use of national modules across Australia. They had adopted some strategies to cope with these problems; for instance they had changed assessment methods, but still seemed unsure that they had found correct answers. This may be related to their lack of participation in Institute staff development activities, due to their being unable to attend at the scheduled times, and hence their lack of opportunity to learn from staff in other industry areas.

Conclusion

The findings of the 'Stages of Concern' questionnaire enable some general conclusions to be drawn about the implementation of CBT in different circumstances, although it must be remembered that the average figures in Table 3 reflect a very wide range of individual responses. Individuals' responses appeared to vary according to their prior experience and their disposition towards the innovation. The overall results for each site are, however, supported by interview and focus group statements from the teachers at each site.

In general, teachers showed similar levels of concern in all three areas where they had not yet accepted CBT and did not feel confident in its use. Where CBT was fully accepted and teachers worked confidently with it, their concerns had moved from concerns with their own performance and towards concern with how to improve their students' learning processes and student outcomes. In some cases, however, this picture was not clear and was complicated by further factors. Staff development appeared to be major factor in the success of failure of CBT implementation, but there is a need to explore appropriate methods of staff development. With insufficient support for teachers, the movement from 'novice' to 'expert' in CBT can be arrested, and teachers can even revert to former practices, as happened at Petersham TAFE with regard to assessment. It also helped if there were motivating factors to encourage teachers to adopt CBT. Competition from other providers was identified as such a factor at both Petersham and Wollongong.

A general conclusion from the study, was that, despite the variations exhibited in the 'Stages of Concern' questionnaire, teachers and trainers were working well with CBT and making a difficult transition successfully. Their task, however, had been made more difficult by the way in which the transition to CBT had been managed by their employers. As mentioned before, staff development had, generally, been concerned with the impact of CBT and its importance for the future of their employer, of VET and, even, of Australia's competitive economic situation. The implementation of CBT was managed in a top-down manner (McBeath, 1997). Implicitly, teachers' concerns had been belittled by this approach. This observation is not intended to assign blame for the poor management of the introduction of CBT, since managers of TAFE institutes and other VET providers were often, themselves, in possession of very little information about CBT. The observation does, however, have implications for the introduction of 'training packages' which again will have their greatest effect upon the work of teachers and trainers, yet all advance information about them is couched in 'impact' terms.

Teachers' high level of concerns, whilst showing that they were not yet confident in all areas of CBT implementation, need not be construed as a manifestation of an anxiety-ridden group of practitioners struggling to catch up with modern practices. The high levels of concern equally illustrated their interest in the teaching-learning process and its outcomes for students and trainees. Old assumptions about teaching and assessment were being challenged and found wanting, and new practices were being developed. Although this process was painful at times for practitioners, it was likely to lead to better outcomes and to more satisfying experiences for teachers and students alike.

Editors' Note: For a copy of the questionnaire and other details of the survey please contact the authors.

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Issues and challenges in consortia-based delivery of professional development for VET in schools

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This paper discusses the findings, implications, issues and challenges arising from the state-wide evaluation of a regionally managed and delivered professional development program for VET secondary teachers in Victoria.

The VET in Schools policy announced by the Victorian Government in 1996 focused on the need to provide students with the opportunity to undertake learning in the workplace, to gain access to a nationally recognised qualification, and to take new pathways into vocational training.

It was apparent that implementation of this policy would place new demands on teachers. Accreditation and articulation of students into further education and training or employment would generally be dependent on the teachers' capacity to meet industry standards and state training authority provider registration requirements. It was also apparent that there were too few qualified and experienced teachers in the service to accommodate the planned doubling of student enrolments in VET in Schools programs over the following four years from the 3600 enrolments in 1996.

In response, the Victorian Department of Education developed a comprehensive VET in Schools professional development strategy. Central to the strategy is a 10 day training course, VET in Schools Professional Development for Secondary Teachers. To accommodate the anticipated large numbers of participants and to meet local requirements, expressions of interest for delivering the course were sought from consortia of TAFE institutes and secondary schools. This decision shifted management of the program from the centralised model of previous years to one which was capable of identifying and servicing the specific regional and workplace needs of the VET secondary teachers and schools. Fourteen consortia were selected to deliver the program in 1997.

This paper examines some of the challenges associated with professional development of VET in Schools teachers. A brief outline of the methodology used in this study is provided. This is followed with a summary of the major findings and a discussion of some of the key learnings to emerge about useful professional development in this expanding area of education.

VET in schools as professional development

Change, for any professional group, is a challenge for current practice right across the work force. How to assimilate change, and direct it, is perhaps the most pressing issue arising in daily work practice, confronting traditional approaches to professionals' learning. Teachers are professionals caught up in tidal waves of educational change, of which workplace learning (called VET-In-Schools in Victoria) is one of the largest, at least in secondary schools in Australia. This is because it simultaneously implicates schools as institutions as well as teachers and their work practices. Whilst the focus of this paper is clearly upon teachers and changes in their work practices, at the outset it is worth connecting these to schools as institutions. After all, schools are teachers' workplaces. Any attempt to advance students' workplace learning, on the part of schools, must give consideration to teachers' understanding of their own workplace - the school - and how change is affecting it. Thus, workplace learning as it affects both by schools and teachers, is central to professional development, not least because it confronts much of traditional school and teacher culture, and for that reason alone, is an obvious focus for teachers' professional development (Cumming and Carbines,1997).

But the alacrity of the growth in school-to-industry programs, across Australia, and of the involvement of Victorian schools in VET-In-Schools indicates that there is a willingness spreading rapidly through schools to tackle the prospects of that hitherto overlooked one-third of school leavers for whom tertiary studies or satisfying full-time employment is not likely or desired.

Richard Sweet, arguably Australia's foremost researcher in this field, has produced several papers (1995, 1997a, 1997b), the substance of them drawing out the tensions and gaps between various Australian and overseas models of school-work and industry relationships, and their implications for schooling and certification of learning. In a paper given for the Australian Principals' Centre (1997a), he makes these remarks on teachers' work:

> ... workplace learning has had an impact on teachers' work. In many cases the establishment of leadership teams has been accompanied by a strong collaborative and team-based approach to teaching. Teachers frequently said that they were now seeing themselves as facilitators of learning rather than as directors. And in their classroom practice, teachers often reported that they were drawing upon the knowledge and experience that students had gained in the workplace, giving students a more proactive role by providing input, leading discussion or questioning other students. Workplace learning has had an impact on the curriculum, giving it greater breadth to meet the needs of a wider range of students. (p2)

Teachers, then, are ripe for, and in many cases, willing to undertake 'continuing professional development'. But what is this? One contemporary writer states:

> Continuing professional development is a term which describes learning activities that are undertaken throughout the working life and are intended to enhance individual and organisational performance in professional and managerial spheres. (Woodward 1996 p1)

However, research evidence suggests that professional development must be tailored to meet individual needs, albeit it within organisational settings. Contextuality is the key.

In a recent OECD report, Raizen (1994) examines the research basis for the linkages now being made between adults' learning and adults work:

> The evidence is strong that learning and motivation for learning are mediated through activities embedded in a context that makes sense and matters to the learner. Because learners have different backgrounds, it follows that not all contexts are equally effective for all learners or for all types of learning. (p69)

Where adults are dragooned into either presenting or participating in such 'activities', effective learning is the first casuality (Cervero and Azzaretto 1990). Forced compliance tends not to 'make sense' to most adults, and neither will activities which do not start from the experiences of adults as sentient, thinking human beings. Sense-making occurs most immediately at work on a site-specific basis. It is the 'here and now' which excites the practical reasoning driving judgments of how to work effectively, and therefore animates the learning possibilities of the workplace. Philosophers in this area refer to this as 'hot action' (Beckett 1996), and this has been empirically developed in several Australian analyses of professions (NOOSR 1990a, 1990b, 1992) through 'integrative' or holistic competence (Hager and Beckett 1995). Psychologists and sociologists in this field refer to this as 'situated cognition' (Raizen pp73-79), and constantly make the point that expert performance (highly proficient or competent workers) will 'integrate specific job knowledge and skills with more generally effective ways of approaching problem situations' (p72).

It follows that where the professional development is didactic, simplistic and un-related to current experience, it tends to alienate those whose learning is meant to be advanced by it. Adult learning needs have been well documented (Jarvis 1990, quoting Knowles 1973, 1984), and centre upon self-direction and experiential integrity. The professional, as an adult learner, constructs an understanding of current practice situations, using a repertoire of practical knowledge, acquired substantially through experience in 'real-life' situations (Cervero 1990 p8). In this, Schon's work on the reflective practitioner (1983, 1987) is central. Professionals learn better when they connect with each other, can discuss their experiences, share their plans and practices, and throughout, are given pause for thought about it all.

A professional development program will accordingly be structured to bring a range of practitioners together, will give priority to their capacities to make efficacious judgments in their areas of expertise, and will present challenges requiring the assimilation of new knowledge in hitherto untried situations. Designing professional development should therefore begin with an overt connection between traditional and current practices and the expertise these require, and the new initiatives. It will already be apparent that the new initiatives will be addressed from within that wide range of already-extant expertise, so a recognition of diverse entry levels will be essential. In this more profound way, a sensitivity to the context (or 'situated cognition') of adult workplace learning is shown. Making sense of new initiatives - coping with change, if you will - is made easier if it is seen to develop what is already constructed as sensible and meaningful to current practitioners. Thus, the freedom to re-construct one's professional practice is what is 'developmental' about professional development, and should be at the heart of planning appropriate activities.

Professional development, building on these principles, and specifically aimed at teachers' learning, and work practices, has been the subject of considerable research in recent years. Drawing on the work of Fullan, Hargreaves, Joyce and Showers, Schulman and several others, certain 'key principles of professional development' for teachers were listed by Ward et al. (1997:11) in their report on a national pilot project for technology teachers. Summarising these 'key principles' as follows:

Professional development programs need:

- to be cognisant of teachers' changing concerns as they are introduced to new ideas and practices;
- to link content and delivery to participants' workplace contexts;
- to demonstrate a convivial supportive environment;
- to show a balance between pressure and ongoing support and acknowledgement;
- to model desired changes in presentations within the program;
- to demonstrate program leaders' enthusiasm for, and commitment to, an innovation.

The general point established by Ward et al, based on a review of literature on professional development for teachers, is that there must be shift away from behaviourist practices towards 'a pedagogy based on constructivist principles which encourage students to construct meanings for themselves, and to become independent learners and problem solvers' (1997:7). Workplace learning, we have noted, confronts the school as an institution, because students come back from work placements having experienced, ideally, association with and as adults, not as 'empty vessels'. If teachers and schools are to successfully engage these experiences, as Cumming and Carbines note they need to, then teachers' own professional learning must be central to that engagement. Accordingly, a professional development program for teachers will be designed around those 'key principles' listed above. They draw on the new 'constructivist' model of adult learning discussed earlier, which we can now regard as applicable as much to school students on workplace learning activities as to their teachers, as professionals.

Methodology

The study was conducted in three phases:

- Analysis of program materials and relevant literature.
- Survey by questionnaire of 470 participants, and 298 regional personnel. The regional personnel group included consortia managers, school administrators and VET school co-ordinators.
- Follow up survey by interview with 45 selected participants and regional personnel to check on interpretation of questionnaire data.

The findings were based on analysis of the survey responses from 165 participants and 125 regional personnel. The objectives of this evaluation study were to investigate the extent to which the VET in Schools Professional Development Project: responded to the VET professional development needs of schools; improved teachers' vocational skills and competencies; enhanced local VET support structures and networks; maximised the use of available resources; and identified future professional development needs.

Major findings

The major findings are summarised below in relation to the key objectives of the study:

How well were consortia able to respond to the professional development needs of schools?

There was general satisfaction with the Program and effort taken to meet the needs of schools and teachers. However, some redevelopment in the following areas was deemed necessary to enhance the effectiveness of the program:

- accommodating diverse entry levels of participants (secondary teachers);
- accommodating different needs of careers/VET coordinators, teachers involved in credit transfer and industry program teachers;
- increasing the focus on adult learning principles;
- showcasing practical ideas for teaching and implementing VET.

To what extent were teachers' vocational skills and competencies improved?

Most participants believed that their vocational skills and knowledge were enhanced significantly by their involvement in the program. However, some participants felt that their time was wasted in the skills upgrade component due to a lack of acknowledgement of their existing competence and experience. Others were disappointed with inappropriate industry placements. This last point is likely to increase as a tension due to the growth in demands on host employers for work placements for participants and students in a range of courses and sectors

To what extent were local support structures enhanced?

The linking of TAFE and schools for the planning and management of this professional development program has greatly enhanced the local relationship between the two sectors. However, TAFE culture is embedded in traditions and practice that are different from the more student-centred secondary school culture, and it is therefore not surprising that some tension existed between the two sectors at the local level

Participants gained great value from networking with other teachers. It was claimed by many that they had increased their understanding of VET in Schools through this source even if their experience within the formal consortia program was not satisfying. Future professional development programs should implement this principle much more consciously with time built into the program for this to occur. Participants want to hear from teachers and other experts on whose experience in VET they can draw, time to ask questions and opportunities to pause and discuss ideas and make connections through reflection upon their own experiences (Schon: 1983, 1987; Ward et al, 1997).

The regional consortia model provided the opportunity to build local capacity to manage the design and delivery of a range of education and training services in the area. Concerns were expressed by some participants that the programs were TAFE dominated although schools were represented on the local reference and management committees.

How well did the consortia make use of available resources?

The use of self paced reading materials in the program highlighted the importance of currency and relevancy. Many participants complained that the manual was 'repetitive', 'unchallenging', 'out of date', 'not user friendly', 'too easy for experienced teachers'. These criticisms were aimed at the components of the manual that required participants to read an article to find answers to a series of questions. Some participants saw this as a 'waste of time' while others complained that the content was too focused on the 'promotion of VET rather than the development and implementation of courses and cuuriculum'.

What future VET professional development needs were identified?

The main implications for future professional development strategies fell into two categories - structural/organisational and content. The structural/organisational implications focus on timing, funding and communication. Short lead time was a cause of frustration for both consortia and school personnel. The consortia cited problems such as marketing, planning programs, recruiting and briefing staff, and recruiting participants as consequences of the short lead time. Participants claimed that teaching responsibilities (particularly VCE), disruption to personal arrangements and poorly prepared teaching of the program were consequences.

The major funding concern for participants was the cost of travel and accommodation for country teachers. Even though the decentralised structure significantly reduced these costs for many, a number of teachers from rural locations still had to travel considerable distances.

Communication into and within schools was found to be deficit in a number of programs. Consortia experienced considerable difficulty in getting information through to the teachers they were targeting. This resulted in last minute enrolments from teachers with little understanding of the commitment they were undertaking. A number of participants withdrew from the program once they became fully aware of time commitment required to complete the program.

Effective implementation and widespread uptake of VET in Schools cannot rely on the teachers of industry subjects (e.g. engineering, hospitality, automotive) alone. Indeed, some of the participants interviewed were despondent about their potential as lone advocates of VET in the schools, to influence negative attitudes to VET in their respective school communities. It requires active support within the school from administrators and other staff to develop implementation plans, create necessary infrastructures, and institutionalise VET within school philosophies.

What can professional development in VET provide for teachers? Analysis of these findings suggest that regionally based professional development programs can provide VET teachers with the following:

- Information concerning current and emerging developments in VET as it relates to schools. It is apparent from the internal school communication difficulties identified in the evaluation, and from the general lack of knowledge among participants pertaining to current developments, that the availability of well packaged and up to date information will be make a significant contribution to the profile and development of VET in participants' schools.
- Exemplars of industry specific module delivery and assessment processes. It should not be assumed that the provision of generic module delivery and assessment information will ensure effective transference to specific applications by all teachers. Many teachers need to be exposed to exemplars of modules which specifically relate to their teaching area, e.g. hospitality or engineering, before effective transference will occur.
- Familiarity with industry practice. Many teachers of VET in Schools programs, particularly those involved in credit transfer subjects, have had minimal if any personal experience in industry. The industry placement component of the PD program can provide these teachers with some insights into the practices, processes and work culture of employment in industry.
- Current industry knowledge ìabout the way things are done nowî. This particularly applies to VET teachers with past industrial experience. In a significant number of cases these teachers are many years removed from industry and consequently need to be brought up to date if the students in their programs are to learn about current practices and developments.
- Contacts and links. A significant benefit of the PD program identified by current participants has been the opportunity to establish contacts and links with local TAFE colleagues and industry personnel.

- Fostering networks. Teachers value the opportunity to share understandings, ideas and experiences with colleagues from other schools - particularly those who are more experienced in the field and can offer practical ìhow to do itî advice. There is also evidence that networks outside of the VET in Schools programs can be generated as a consequence of the provision of locally based PD.
- Explicit implementation strategies. Teachers seeking to implement VET programs in their schools require clear, proven and accessible implementation strategies.

Issues and challenges for consortia-based delivery of professional development

Meeting diversity of school and teacher needs. VET in Schools is growing exponentially and it has a short history. Much of the knowledge base and 'theories' about what does and does not work has emerged from the learnings and understandings gained from pilot programs. These programs pushed new boundaries in coming to grips with competency-based training and assessment, understanding work-based learning and establishing links between local employers, schools and training providers. Each program has its own story (Cumming and Carbines, 1997). The peculiarities of local conditions, pressures and constraints mean there are no special formulas for how to establish and maintain these programs. Rapid growth, and a limited (but growing) knowledge-base of VET in Schools present significant challenges for agencies delivering professional development for teachers.

Pressure on schools and teachers to come up to speed in a short space of time is a source of anxiety. Also, teachers have different levels of experience and knowledge of the concept of vocational education and workplaces beyond school settings. Such diversity needs to be acknowledged by consortia in planning professional development. The range of diversity and ongoing professional development needs of teachers who participated in this study suggests that consortia management teams need to continually review needs of their school communities. Meeting these needs in one 10-day program is difficult and will become increasingly so once a critical mass of teachers have participated in it. How do you provide for their ongoing needs? It therefore seems that a more long-term strategic approach needs to occur with decisions about local professional development activities being made as part of larger regional plans for VET in Schools. This is especially important for rural and remote regions where distance and isolation add to the range of variables that need to be taken into account.

Timeliness of professional development programs. One of the difficulties of delivering a 10-day program over a semester is timing. School decisions about programs for the following year need to be in place about August to enable information to be distributed to students and parents and the necessary planning to occur. This effectively means that the learnings that a teacher may gain from participating in professional development late in the year may not be operationalised in the form of establishing a VET in Schools program for at least another year.

Diminishing tensions associated with mandated professional development. Consortia planners will need to be aware of the tension generated by the imposition of a mandated professional development curriculum which is program oriented, prescriptive, entrepreneurial , technological and authority based, on secondary teachers imbued with a culture which is process oriented, student centred, and increasingly network based. This tension has the potential to impact negatively on attempts to change the teachers' practices and beliefs (McBeath, 1997; Fullan, 1991).

Conclusion

Outcomes from the evaluation of the state-wide professional development program for teachers of VET in secondary schools indicate that an effective PD program hooks into local structures and networks; is flexible in addressing needs; caters for a range of entry levels; uses adult learning principles, particularly with regard to recognition of teachers existing expertise and with an emphasis on experiential collaboration; and includes practical implementation strategies. Specific secondary teacher needs to emerge from the study include the acquisition of workplace skills and experience; opportunities to network; ìbig picture VETî that connects with teachers' immediate needs; and a focus on specific industries re competencies, assessment and credit transfer.

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Reviewing the competency standards for assessment and workplace trainers

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The National Assessors and Workplace Trainers Body (NAWTB) was given the responsibility for the development of a Training Package for Workplace Training and Assessment to provide comprehensive resources for trainers and assessors. The NAWTB commissioned a specific study to review the two existing sets of Competency Standards (Assessment and Workplace Trainer). The new training package was required to have cross industry application.

A large number of groups was reported to be using the existing standards (NAWTB 1996). Such a wide interest base provided a potential breadth of expertise and experience in the use and understanding of competency standards. The project team proposed to use this experience in that the data for the development would reflect the national population of users of the standards and the NAWTB endorsed this approach.

The review required a needs assessment of workplace training and assessment competencies which involved several steps. First we established the status of the existing standards in terms of physical presentation; content; awareness and understanding, use and satisfaction of users. Second, we needed to establish what the benchmarks should be. This was more problematic than establishing existing levels but involved experts or specialists defining ideal levels of use, understanding, presentation and so on. It was also possible to use other endorsed and approved components of training packages as models or benchmark components. Third, we established the expectations of audiences, users and consumers of the existing components of a possible training package. The we examined the gaps between benchmarks, expectations and the existing situation. The gaps were used to prioritise and change objectives, developed in consultation with the NAWTB and written into the form of recommendations for change and implementation. The target groups for the needs assessment were identified as:

- Purchasers of either the Competency Standards for Assessment and/or the Workplace Trainer Competency Standards
- Providers of training against either or both sets of the standards
- National Industry Training Advisory Bodies (National ITABs) and Competency Standards Bodies responsible for developing industry Training Packages
- State Industry Training Advisory Bodies (State ITABS)
- State/territory Training/Recognition Authorities
- Specialists in workplace assessment and training as nominated by the NAWTB.

In policy terms, groups 3,4,5 and 6 were regarded as the specialist groups who established the expected levels or benchmarks. Groups 1 and 2 in general were the defined user groups. A series of surveys was undertaken to establish current levels of use, satisfaction, understanding and implementation of the two sets of standards for users and specialists. Only one group of purchasers was sufficiently large to warrant samples being drawn. A series of telephone interviews was conducted with survey respondents who indicated an agreement on the survey instrument. This series of 96 interviews were especially important in examining issues, knowledge and understanding of the standards in some depth. Details of the samples and procedures are available in the report by Gillis, Griffin, Falk, Catts & Bowles (1997).

Surveys of users of the standards

In preparing for the surveys, it became apparent that the data provided by the NAWTB was out of date, and some weeks were spent repairing it to ensure that at a minimum, addresses were correct, before drawing a sample. All questionnaires were sent by registered mail. This ensured that the target respondent had to sign for the questionnaire and that the correct person was reached. Despite this, survey returns were low and at first we feared that the results would be unrepresentative of the target groups. However, after an exhaustive follow up, it became clear that the data base was also out of date and that no accurate data on purchasers existed. The NAWTB's data on providers of trainer and assessor competency standards was similarly inadequate.

Some 273 mail-out questionnaires were returned completed. A further 42 were returned with incomplete data. The error rate in the database was of an average order 35%. The response patterns indicated that an additional sub population existed, particularly among providers of training against these standards. An exhaustive interview of non-respondents revealed, first of all, that the error rate in the national board databases was of the order of 35%. Moreover, approximately two thirds of the persons recorded as having purchased the competency standards did not remember purchasing them, did not work at that enterprise and never had, or we found that the enterprise did not exist, or could not be traced (8). Of the original 812 instruments distributed, 804 were traced and reasons established for its return or non-return or for the provision or non-provision of data. The survey therefore presents an accurate description of the penetration of the competency standards for trainers and assessors, and enabled the separation of informed respondents or specialists from the users and non-informed purchasers. This separation was important for establishing gaps between ideal and existing situations.

Initially, all groups were assumed to consist of individuals who were familiar with the standards, (due to having purchased or having been supplied with them). However, 70 target subjects reported that they could not complete the questionnaire due to a lack of familiarity and experience with the standards. For another 137 individuals, the standards in assessment and training were neither relevant nor important in their context to make a response meaningful.

Hence, the NAWTB database provided an unusual insight into the impact and penetration of the competency standards for assessment and workplace training. Some 60% of those assumed to be users were in fact not only non-users, but were totally unfamiliar with the topic of competency standards. Data on the training providers also contained numerous errors. It became clear that there is no accurate national database on providers of training in assessment or in workplace training. Complete databases of training providers could have been obtained from state training authorities, but this would not have been the population of interest in this investigation. The study was expected to focus on those who had purchased, or who had been supplied with, the standards booklets. There was an assumption that they would be sufficiently familiar with them to offer comment. State training authorities did not, at that time, require the use or possession of the national standards for registration and it appeared that the national standards were by and large ignored in training programs for workplace assessors and workplace trainers

Although it was not possible to trace all of the purchasers, contact information for the providers and all other populations not listed in the NAWTB database, were available. Return rates therefore were calculated against sub groups and follow up telephone calls sought to establish reasons for non-returns in the adjusted samples. This procedure established that the respondent group was representative of the group who had purchased and used the standards and thus was appropriate for the definition of status and benchmarks for the needs assessment. More than 90 % of valid purchasers were accounted for. Less than half of providers of training completed the questionnaire but telephone follow up revealed that the standards were not in use and, in many cases, the provider had forgotten that such standards existed!

Use of the standards

Enterprise respondents represented all industry sectors. Fifty nine percent (59%) of the providers reported that they delivered training in the Standard and Extension Units of the Competency Standards for Assessment; 81% were accredited providers of Workplace Trainer Category 1. A group representing 70% were accredited deliverers of Workplace Trainer Category 2. Approximately 1/3 of the providers indicated that they were accredited to deliver training against the specialist units of the Competency Standards for Assessment.

The following industries were represented among the State/Territory and/or national ITAB samples: - seafood, automotive, business services, community services and health, construction, manufacturing, telecommunications, transport & distribution, manufacturing engineering and related services, finance, good, mining, wholesale/retail, public safety, rural, tourism and utilities.

Knowledge and familiarity with the standards among users

All members of the specialist and expert groups interviewed held the common view that, in industry settings assessors were to be competent in the technical competency as well as assessment and training competencies. If it is required that trainers of assessors and workplace trainers must also be aware of their standards to assess against them, this requirement may not be upheld in assessor and trainer competency programs. It is unlikely that providers unaware of the standards or not delivering courses against them could be fulfilling this requirement which is a fundamental benchmark for training and assessment against competency standards and has been established in ANTA policy documents (ANTA 1996, 1997). Inasmuch as assessment and training could be described as an 'industry', this could be interpreted as a serious situation and raises cause for concern about the efficacy of competency based assessment as an improvement tool for industry. There is a very serious gap between the levels of awareness and competency against the training and assessment standards among assessors and trainers in this field. The inference to be drawn from these results is not confidence inspiring.

Only 25% of the providers had sufficient experience to justify confidence that they were familiar with the standards. An informed group' of providers was therefore identified using the assessment activity self-reported in the survey. The lack of knowledge and understanding reported or diagnosed by 75% of the training providers in assessment and/or workplace training could in part be due to the existence of learning resources for Assessors as well as Workplace Trainer Category 1 and 2 (ACTRAC 1994, NSDC 1995). Many providers, who were accredited to deliver training against the Workplace Trainer Competency Standards and/or the Competency Standards for Assessment, had originally purchased and exclusively used 'packaged' training materials, and subsequently forgotten that the standards existed. Training materials developed to meet the requirements of the initial standards (CSB ñ Assessors and Workplace Trainers, 1993 and 1994) were used, with the assumption that these met the requirements for training workplace assessors and trainers. For many reasons, they did not. Consequently, trainees in these programs are not explicitly assessed against the national standards as part of the process of registration as assessors or trainers and were not in turn made aware of the national standards. The flow on effect of this omission in other industries where direct assessment against industrial standards is put into effect is daunting.

Many of the providers, aware of the standards were nevertheless, inexperienced in assessing against either set of the standards. For instance, approximately 60% of the providers had conducted less than 50 assessments against the Standard & Extension Units of the Competency Standards for Assessment. Even fewer had conducted assessments against the Specialist Units (approximately 2/3 had conducted less than 10 assessments against the Specialist Unit ñ Develop Assessment Tools, and approximately 80% had conducted less than 10 assessments against any of the system level specialist units). Similar lack of assessment activities and experience was found in relation to the Workplace Trainer Competency Standards, with 2/3 of the provider respondents conducted less than 50 assessments against Category 1 units, and 78% conducting less than 50 assessments against Category 2. Despite limited assessment activities against these standards, all of these providers had current accreditation with the State/Territory Recognition/Training Authorities to deliver training and/or assessment against these standards.

The VET sector was the most consistent sector conducting training and assessment against the standards followed by business, community services, health and retail. Some industries such as seafood, property services, forestry and the arts industries had very sparse exposure or training in either assessment or workplace training against the national standards.
For both the Workplace Trainer and Assessment Standards, the standards had become essential reference materials for busy people who used them in concert with specialist consultants employed to do the training and assessment. This is not the population to provide data for the revision of the standards.

The review of the standards: content

Both sets of competency standards were assessed against the levels required for content quality (ANTA, 1997). These were the following:

- Cover a range and breadth of functions, meaningful in the workplace.
- Incorporate or identify overlapping industry and cross-industry standards & qualifications.
- Avoid bias or discrimination.
- Outcome-focused and suitable for flexible use by enterprises
- Full expression of competency (all four components)
- Incorporate underlying knowledge and skills
- Incorporate or identify key competencies
- Incorporate language, literacy and numeracy

While most were generally satisfied with content and presentation, many had confused the standards with the 'off-the-shelf' training materials. All units, in addition to 'The Guide to the Competency Standards for Assessment' (NAWTB 1997), were rated as being relevant and meaningful to the workplace, for all groups of respondents (ie ITABs, providers, purchasers and State/Territory Recognition Authorities). For each unit, the language was seen to be acceptable and appropriate. The specialist units of the Competency Standards for Assessment were identified as more difficult to assess than the Trainer Category 1 and Category 2 units.

The distinction between Workplace Trainer Category 1 and Category 2 was thought to be meaningful in the workplace by 75% of telephone interviewees; the two categories of trainers were argued to have different target audiences and to meet the differing needs of industry. The differences in difficulty level between them were thought to be reasonable and satisfactory for 68%. The most common suggestion to reduce the gap was to increase the difficulty level of Workplace Trainer Category 1 by including an assessment component.

A composite index was constructed from answers to questions dealing with familiarity, 'looking up' the standards and frequency of assessments against them. This gave two levels of familiarity and providers were subdivided into ìinformedî and ìnon informedî categories. Clear differences on all indicators were found for these two groups, but there was considerable confusion between the 'evidence guides' of the standards and the 'Guide to the Competency Standards for Assessment' (NAWTB 1997). Consequently the response to the Guide cannot be meaningfully interpreted.

The overall evaluation of the assessment and workplace trainer units against the full expression of competency (perform task, task management, contingency management, job/role environment skills and transferability) was positive despite the levels of awareness and implementation of the competency components in training programs being low. Interviewers, for instance, reported that 61% of respondents were unable to offer any suggestions about assessment against the components of competence and after persistent questioning, concluded that there was a widespread lack of understanding of the components and their implications for validity and reliability. The National Training Board's (NTB 1992) initial definition of competency (task, management, contingency, role incorporation and transfer) is widely ignored in both workplace trainer and assessor training.

Category 1 Workplace Trainers need to prepare, deliver and review one-to-one or small group on-the-job training. There was a general view that these workplace trainers also need to conduct workplace assessments. In fact some industry providers of Category 1 trainers were giving additional training in assessment to meet these needs. It would be, however, unreasonable to expect Category 1 trainers to undertake training in both the standard and the extension units of the competency standards for assessment because it is not their primary role in the workplace. Hence a new modified Category 1 unit in conducting assessment was raised by specialists and recommended to the NAWTB. From this emerged three feasible levels of assessment and training competencies.

There was also support for the development of additional specialist units for conducting training needs analyses, designing, establishing, managing and evaluating both training and assessment systems.

There were concerns with the Specialist Unit 'Developing Assessment Tools'. Many argued that this unit did not cater for designing, developing, trialing and validating assessment tasks from existing unit(s) of competency where no existing assessment tools were available. The element 'Develop Simple Assessment Tools' of the Extension Unit: Plan and Review Assessments was reported to be more complex than the Specialist Unit: ñ Develop Assessment Tools. An analysis of the content of these elements supported this general opinion. Some adjustments to these units were warranted. Despite the view held by a small number of interviewees that it was not possible to identify such a thing as a simple assessment tool, there was widespread agreement that such a distinction was not only warranted but essential.

Technical quality of the standards

An examination of the current competencies revealed that considerable revision was needed to meet the ANTA requirements. The areas that required attention included the need to add 'unit descriptors', expand the 'range of variable' statements and extensively develop 'evidence guides', particularly for the workplace trainer units. The relationship of each unit with key competencies had also to be established.

These changes however point to the importance of needs assessment as a basis for change. If training packages are developed from user satisfaction surveys only, the benchmarks and ideal levels of operation would be ignored. Establishing the desired level as well as the current status provides a rational basis for change. The users' endorsement of the existing standards and the widespread implementation of training programs based on alternative curricula and competencies, together with a worrying level of apathy with respect to the training and assessment competency standards were noted in the study report. It demonstrated that the ANTA requirements and recommendations of specialists have established expectations above those of users. There is an obvious need to implement a policy thrust to raise the overall levels of performance among providers of training and assessment for competency assessors and trainers.

Qualifications of assessors and trainers

Many users of the Workplace Trainer and Assessment Competency Standards had difficulties comprehending the meaning of AQF levels. Most were confused about how standards relate to qualifications, and many were not sure what the different certificate levels meant. Consequently, the gaps between the understanding of specialists and that of users (and non-user - purchasers) meant that the recommendations for change need to focus on the provision of basic information first.

The preservation of the status quo tended to be supported in regard to current AQF qualifications for the standards; 67% of providers, for example, suggested that the Specialist Units of the Competency Standards for Assessment, including the Standard and Extension Units, should be aligned to Certificate IV. Few however had more than basic training in competency assessment and few had completed more than three days training in assessment. Expertise in specialist fields was almost non existent. It is feasible that some self-protection was operating in that the result reflected a general lack of training and or formal qualifications in the area held by the respondents and a reticence to stipulate qualifications above those already held. Over 71% of the providers recommended that the Workplace Trainer Category 2 units should remain at Certificate IV. However, 58% of the interviewees could not comment on this issue because of lack of knowledge and experience. One fifth (19%) of the more informed group of providers and purchasers argued that that the qualification for Category 2 Workplace Trainers should be lower than certificate IV, but specialists held the view that the workplace training units should be raised to a Diploma level.

Many respondents could not comment on the qualification to be issued for successful demonstration of all the units within Category 1 Workplace Trainer. Those who were able to comment (n=34), suggested that Category 1 units should lead to a Statement of Attainment rather than a qualification. Moreover they recommended that the statement should be included within a package for Certificate II and/or packages within a generalised Certificate IV. Many (52%) felt that successful demonstration of the Standard and Extension units should be at least at certificate level, with the most common response being Certificate III (as it currently is in Queensland).

Assessment guidelines

The Assessment Guidelines provide detailed advice for designing assessment materials and conducting assessments. They also specify the qualifications and training needed by those whose task it is to assess the assessor and/or workplace trainer. There was general concern among the respondents for the quality of training and assessment being delivered against the two sets of standards. Concerns were generally raised in terms of the methods used for assessment (or the lack of formal assessments) and the subsequent issuing of qualifications as assessors or trainers.

A shelf life for the trainer and assessor qualifications, subject to audited evidence of practice and continued professional development was considered as essential and there was general agreement among specialists that assessors must have continuous experience in assessment, although there was no agreement on the interpretation of "continuous". Alternative pathway options for assessors and workplace trainers were identified such as tertiary education in vocational education and training, subject to the standards and experience being addressed.

Conclusions and recommendations

The results are clear and unambiguous. There seem to be few aspects of workplace training or assessment competencies, national frameworks, standards or assessment practices that have achieved significant market penetration in terms of understanding and application. At best, between one in four of the providers are well informed about the existence and use of the Competency Standards for Assessment after more than half a decade. A higher level of awareness exists for the Workplace Trainer Competency Standards.

How can this result be broadly interpreted?

Optimistically, we can say that around one-quarter understand the format of competency standards or can apply the national principles of assessment (NFROT assessment principles). The same fraction can accurately interpret and apply the standards to meet differing needs/purposes, understand the underlying dimensions of competency and have extensive experience in assessing against the Competency Standards for Assessment and/or the Workplace Trainer Competency Standards.

Despite these disturbing findings, a strong, unified, useful and responsive national vocational education and training framework underpins successful learning and industry competence. It also serves longer-term lifelong learning targets. On the one hand, there is confidence in the framework, and optimism for its achievability. On the other hand, there are deep concerns about the low levels of penetration on uptake of the standards. Of most concern, was the lack of quality assurance and rigor in the training of workplace trainers and assessors which, in many ways, was demonstrated to be inadequate in a significant number of settings, where training providers lacked sufficient knowledge of the standards. The evidence obtained in the study raises concern that unless the commitment, interest and expertise of trainers and assessors can be improved, competency-based training as first envisaged by the National Training Board in 1992, which is now dependent on assessment, is in jeopardy. It will take a commitment and courage of the NAWTB to implement the changes. Compromise will not lead to improvements in the system. This has been soundly illustrated by the impact of procedures to date. It is also clear that consultation with "purchaser-user" groups will not identify the way forward in assessment and training. The knowledge base is inadequate.

An extensive dissemination and user-uptake program is essential to gauge whether these levels of awareness can be enhanced. However, the most cost-effective view of the project outcomes is one that supports a constructive reappraisal of the existing vocational education and training principles and frameworks to attempt to knit industry, individual and national needs.

The recommendations of the study can be examined in full in the research report Gillis, Griffin, Falk, Catts and Bowles (1997).

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Analysis of training needs: a case study of the crime prevention 'industry' in Australia

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The Centre for Research in Education, Equity and Work (CREEW) undertook a training needs assessment for The National Campaign Against Violence and Crime (NCAVAC) and the National Anti-Crime Strategy (NACS) during the last four months of 1997. The researchers noted that 'crime prevention' is a relatively new term, has been applied to many different kinds of activities and has developed many different subtle and often ambiguous meanings (eg Robert 1991; Van Dijk & De Waard 1991). At least one commentator (McMillan 1992) has referred to it as a "rubbery concept" with "elastic" boundaries which are not "easy to place".

The study involved four separate but related phases - an 'industry' analysis, a labour market analysis, an occupational analysis and a training needs analysis. It is the researchers' understanding from a national and limited international search that this was the first time that research of this nature and scope pertaining to crime prevention had been undertaken.

This paper focuses primarily on the needs analysis phase. Its purpose is to explore the notion of training needs and how it may be conceptualised and made operational, and to illustrate these conceptions using data from the needs assessment (for the full report, see Wyatt *et al.* 1997).

Issues relating to training needs assessment

The notion of needs assessment is not unproblematic. One issue is: how are we to define a need? Most commonly, a training need is conceived as a discrepancy between what is and what should be. This approach is frequently used in practice and indeed can be very helpful in identifying ideas for programs, developing individual professional development plans or addressing organisational or community issues.

We must also recognise, however, that it can be potentially restricting. One limitation emerges from the negative connotations attached to 'need' as a 'discrepancy', that a need is accompanied by the idea that something is deficient, missing or 'wrong' and has to be 'fixed'. Another lies in the implication that developing responses to a need (eg designing training courses) using needs assessment data is primarily a reactive rather than a proactive process. So the trainer is perceived as "the one to stamp out organisational or community fires rather than the one who tries proactively to initiate innovative changes" (Caffarella 1994, p69).

Another issue associated with needs assessment is: to whom do we listen? Individual, organisational or community ideas on what is needed are not always in tune with each other. Also, external voices, not necessarily directly connected with an organisation, are increasingly asking to be heard - for example, witness current government and industry voices 'speaking' to TAFE systems. A third issue is: how are we to identify needs? Writers usually declare that no one method is better than another, and there have surfaced a substantial number of models (eg Boydell 1979, Zemke & Kramlinger 1984, Kaufman 1987, 1988; Rossett 1987, Sleezer 1991, Tracy 1992, Anderson 1994), selection of which depends upon a bewildering array of contextual factors.

The approach of this study

In this study, the assessment of training needs was conceptualised and made operational in the following four ways.

Firstly, and most generally, training needs may be inferred from a broad comparison of what practitioners bring educationally to their job with what the role itself requires for competent performance. Such a comparison can provide an overall, aggregated picture of the 'fit' of practitioner backgrounds with job requirements, a picture against which other more specific ways of gauging training needs may be interpreted. Secondly, training needs may be gauged by a gap analysis of current and required levels of ability on units of competence, where current levels can be identified through self-reports and required levels from practitioners' perceptions of what their organisation requires of someone in their position. Thirdly, training needs may be understood from practitioners' direct judgements of their need for further training on specific aspects of their work, such as knowledge and skills underpinning these units of competence (Harris *et al.* 1995). And fourthly, training needs may be most directly identified by asking practitioners to acknowledge and report their priorities for further professional development.

In these various ways the researchers attempted to construct a picture of training needs from different perspectives and on different aspects.

Methodology

Our study largely followed the model proposed by Caffarella (1994 pp76-77). Information for the overall study was received from the following sources: literature and document reviews; responses to a national press advertisement; in depth interviews with key stakeholders; focus group sessions across the country; census data sets; functional analysis workshops and validation of the results with key informants; and a training needs analysis survey of crime prevention practitioners across Australia.

A database of names and addresses of practitioners was developed in 'snowball' fashion from information gathered during the first three phases. By the time the needs survey began, there were 623 names spread across the country. An instrument was piloted with 12 practitioners, then mailed to all persons on the database. By cut-off date, there were 204 respondents (a response rate of 33%). This response rate was considered satisfactory given the ill-defined nature and geographical spread of the crime prevention population and the fact that there were several other national research projects in crime prevention occurring simultaneously. Concurrent with the survey, focus groups were held in four capital cities and a teleconference was conducted with participants in Western Australia.

Respondents came from every State/Territory and were spread across cities, towns and rural areas. One quarter were in the police services, 16% were in local government and 28% in other government departments. Another 16% reported they worked in community agencies, four percent in church organisations and a further 11% in other organisations. Forty-six percent identified two-thirds or more of their job to be crime prevention (a 'core' group), 16% identified between one-third and two-thirds (an 'overlapping networks' group) and 39% identified less than one-third (a 'non-core' group). The spread of years of experience reflects the diverse character of this work: the sample was a mix of those relatively new to the field with those who had considerable experience. The sample was almost evenly divided in terms of gender. It was a relatively highly educated group, with 62% holding a higher education qualification.

The results are summarised in terms of the four ways in which training needs were conceptualised.

Qualifications and role requirements of crime prevention practitioners

The sample was relatively highly credentialled in terms of post-school qualifications. Slightly more than half of those respondents who had completed a qualification reported that their award was 'mostly' or 'very' relevant to crime prevention work (only 17% said 'very relevant'). That high ratings were not forthcoming for award relevance is not altogether surprising as most of the qualifications would have been general in nature and not necessarily offered with crime prevention as the key focus (for example, by far the most common award was a generalist BA).

Respondents were also asked whether they had completed any *specific* training or activities to assist them in carrying out their crime prevention work. Fifty-eight percent reported that they had undertaken specific training. Nearly three-quarters of respondents reported these specific activities to be 'very relevant' to their crime prevention work, while another fifth judged them 'relevant'.

The researchers surmised from these data that while formal qualifications are helpful in providing a general background knowledge and skill base for crime prevention practitioners, nevertheless there is a clear recognition of the need for shorter training activities *more specifically focused* on crime prevention. Those activities already completed were reported to have been very relevant to respondents' work.

This recognition is confirmed in another question that specifically asked whether *further* training / professional development was important for them personally in their crime prevention role. Three quarters of the respondents stated that it was 'essential' (41%) or 'important' (34%).

Training needs from reported gaps between actual and required competence

Gaps for each respondent were calculated by subtracting required level (as perceived by the individual) from current (individual) level of ability. Training need was therefore indicated by a minus score (and under-use of individuals' perceived abilities was indicated by a positive score). Table 1 presents the results on each of seven units of competence derived from the occupational analysis.

Table 1: Reported gaps between levels of current competence and required competence

	Perceived level of training need						Perceived surplus of ability							
Units of competence	-3		-2		-1		0		+1		+2		Totals:	
	n	%	n	%	n	%	n	%	n	%	n	%	N	%
Develop projects / programs			18	9	65	34	88	46	19	10	3	1	193	100
Deliver and evaluate projects / programs	2	1	15	8	65	34	88	46	19	10	1	0.5	190	100
Negotiate and advocate sectoral interests			12	6	58	30	96	50	24	12	3	1	193	100
Enable / promote involvement of others	1	0.5	9	5	43	22	105	55	28	15	6	3	192	100
Provide information to internal and external clients/ customers	1	0.5	7	4	46	24	114	59	21	11	6	3	195	100
Develop self and other staff	2	1	6	3	56	29	90	46	36	19	4	2	194	100
Manage resources and processes			13	7	47	24	101	52	31	16	2	1	194	100

The data reveal a reported training need that is relatively widespread across the sample though not particularly strong. Just over four out of ten respondents acknowledged a training need on the first two competencies and approximately three out of ten a training need on the other five competencies. Overall, 35% of the sample reported a training need. The strength of the training need, however, in the majority of cases was indicated by only a 'gap' of one point - that is, 'actual ability' was reported as being, for example, 'moderate' and 'required ability' as 'high', or the former as 'high' compared with the latter as 'advanced'. Conversely, one or two respondents out of every ten reported that their ability was not being used to the fullest extent by the organisations for which they worked.

Training needs in knowledge and skill areas of relevance to crime prevention work

The extent of training reported to be needed across certain knowledge and skill areas underpinning the competencies for crime prevention practitioners is reported in Tables 2 and 3. This need is expressed in two ways: by calculating a mean score through weighting the "high" (five points), "moderate" (three points) and "little/no" (one point) responses, and by recording the percentages of respondents who said they had a "high need" for further training.

The tables also show respondents' views on the relative importance of each of these areas in crime prevention work. Thus in each area, strength of need can be judged against perceived importance, such that high needs for training on areas of 'high' importance will be high priority.

Knowledge areas

Table 2: Levels of importance and training need for underpinning *knowledge* areas (in order of highest mean training need)

Knowledge areas	*N*	*Level of importance (mean)*	*N*	*Level of training need (mean)*	*Reported "high" need for training (%)*
Crime prevention planning	193	4.2	193	3.7	49
Law, legal system, policies	193	3.7	192	3.7	31
Project management	192	3.9	191	3.2	29
Criminology	194	3.4	193	3.1	30
Strategic planning models	192	3.6	190	3.1	26
Community development	189	3.9	185	3.0	31
Research design / methods	192	3.6	192	3.0	31
Public relations, marketing	192	3.5	191	3.0	31
Information technology	190	3.3	190	3.0	29
Victimology	189	3.5	184	3.0	26
Structure of organisations	191	3.0	189	3.0	16
Communication theory	188	3.9	185	2.8	23
Training design principles, adult learning	192	3.2	190	2.7	24
Access and equity	191	3.6	188	2.7	21
Role and nature of advocacy / representation	190	3.3	188	2.7	18
Statistics	188	3.3	190	2.6	22
Local community	188	3.8	186	2.6	18
Human resource management principles	192	3.0	190	2.5	16
Financial management	194	2.8	192	2.4	15
Volunteering	191	2.7	188	2.3	14

Scale of importance: 5 = "high importance", 3 = "moderate importance", 1 = "little or no importance". Scale of need: 5 = "high need", 3 = "moderate need", 1 = "little or no need for training"

The respondents in this study reported that their highest training needs in *knowledge areas* were:

- crime prevention planning (where a substantial 49% declared a "high need" for training)

- the law / legal system / policies (31%)
- project management (29%)
- criminology (30%)
- strategic planning models (26%)

Within this list, crime prevention planning and, to a lesser extent, project management, were rated most highly in importance. A knowledge of communication theory, of the local community and of access and equity issues are worth noting as three particular areas that were considered of relatively high importance but having a lower need for training than those already mentioned.

Skill areas

Table 3: Levels of importance and training need for underpinning *skill* area (in order of highest mean training need)

Skills areas	N	Level of importance (mean)	N	Level of training need (mean)	Reported "high" need for training (%)
Collaborative, teamwork	193	4.0	191	2.9	30
Training design/ delivery/ evaluation	192	3.6	189	2.9	27
Public relations, marketing	189	3.5	186	2.9	26
Project management	186	4.0	183	2.9	25
Negotiation	191	4.0	189	2.9	24
Change management	189	3.3	188	2.9	23
Strategic planning	188	3.9	187	2.9	20
Leadership	193	4.0	191	2.8	23
Conflict management	194	3.8	193	2.8	23
Problem-solving, analytical	192	4.1	190	2.8	21
Time management	191	3.6	190	2.7	22
Facilitation	193	3.9	191	2.7	19
Research	192	3.6	190	2.7	17
Stress management	192	3.4	190	2.6	20
Resource management	192	3.5	189	2.6	16
Advocacy	190	3.4	188	2.6	15
Communication	195	4.3	194	2.5	24
Networking	191	4.1	189	2.5	20
Committee and meeting skills	193	3.7	191	2.4	18
Working autonomously	193	3.5	192	2.3	16

Scale as above

Respondents reported that their highest training needs in *skills* were:

- Collaboration, teamwork (where 30% declared a "high need" for training)
- Training design/delivery/evaluation (27%)
- Public relations, marketing (26%)
- Project management (25%)
- Negotiation (24%)
- Change management (23%)
- Strategic planning (20%)

Within this list, skills relating to collaboration / teamworking (60%), negotiation (60%) and project management (58%) were also rated highly in importance. Skills in communication, networking, leadership and problem-solving were rated highly in importance but were not perceived as such a high training need as the other skills already listed.

Analysis of knowledge and skill training needs

A useful question from the perspective of training developers and providers is: which sub-groups in the sample report these high training needs? Further analysis (given in the full report) shows considerable variation within the total sample by demographic characteristics. State/Territory, type of agency worked in and proportion of job time spent on crime prevention were key variables in the case of both knowledge and skills, and gender was also important in the case of skills. Only on eight knowledge and four skill areas (12 out of 40 areas) were there no significant differences. Clearly, *these demographic characteristics are key factors to be considered in any assessment of training needs* for crime prevention practitioners.

It is evident that *the levels of training need in knowledge are greater than those in skills*: while the highest mean need in skills was 2.9, as many as 11 of the knowledge areas scored a higher mean, particularly crime prevention planning and law/legal system/policies. This tends to support the researchers' notion that specialist knowledge is the key distinguishing factor between the roles of crime prevention practitioners and those of other similar human services practitioners.

That most of the mean scores for training needs in skills are relatively lower than those for knowledge suggests *practitioners are not so concerned with their levels of competence in skills.*

Furthermore, the fact that all the means scores on skills are very similar (in the range 2.9 to 2.3) shows that their *training needs across skill areas do not vary much.* This lends support for the researchers' contention that the skills for crime prevention practitioners are rather generic and do not differ greatly from those of similar human services practitioners. The skills can be developed, and most often are judging from the mobility patterns reported in the consultations, during work in many similar human service fields.

Having arrived at these conclusions, however, it is noteworthy that *skills are rated just as highly as knowledge in crime prevention work, and in most cases more highly.* While only one knowledge area rated a mean of 4.0 or more, as many as seven skills rated that highly; conversely, while nine knowledge areas rated a mean of less than 3.5, only three skill areas rated that lowly. Thus, skills are seen as very important to crime prevention work, though further training in them is seen as less urgent than in the knowledge areas.

Training needs from respondents' top three priorities for further professional development

The *most direct* way of assessing training needs is explicitly asking respondents to list their priorities for further professional development related to crime prevention. They named a total of 435 topics/activities, which were then clustered under similar headings. The highest priorities for professional development were, in fact, very similar to those highlighted previously (details are given in the report).

Two particular open-ended comments encapsulated the essence of these results and captured the inherent tension between the specific and the general. While one respondent emphasised the importance of developing and delivering programs: *"Clearly training needs will vary significantly for different practitioners, for example, local program deliverers, government policy advisors, police/ law enforcement officials. The primary focus should be on program development and delivery,"* another highlighted the more general knowledge base underlying crime prevention:

> Mainstream crime prevention is about incorporating crime prevention principles/ practices into normal projects/ programs, and cooperating to achieve agreed outcomes to identified problems ... Understanding crime prevention theory should be seen as a basic requirement for training only. Much greater emphasis needs to be placed on organisational

management, leadership, strategic planning, change management, etc. to achieve the organisational outcomes mentioned above.

Given their locations and situations, respondents would prefer workshops/seminars in their home city/town (57%) or, secondarily, in a nearby regional centre (30%). Preference was next for self-directed learning packages for individual study and intensive national workshops; however, on-the-job learning and distance learning were not so highly favoured. The strongest preference for provider was for universities (44%). The other five alternatives were similarly rated.

A useful checklist of attributes that crime prevention practitioners would like in whoever provides their training was generated from the "other" responses, and included: national sponsorship, appropriate expertise, qualifications to deliver, experience, competence, effectiveness and extensive success in the area.

An important aspect of training is its formal accreditation and the potential for it to lead to recognised qualifications or certification. Six of every ten respondents stated that this factor was 'essential' or 'important' to them. Clearly, whatever professional development may be made available in the future for crime prevention practitioners, it is important that the potential for accreditation, or at least official recognition of some kind, is built into programs.

Open-ended comments in the questionnaires underlined some other characteristics of the professional development that respondents desired, such as the following (illustrative quotations are given in the report): practical, inclusive, credible, experientially recognised, in-service, contextual, collaborative, targetted and planned, not duplicated, consolidated, geographically available and current. A very important characteristic was national alignment.

Summary and conclusions

The following summarises the key findings from this needs analysis. Firstly, *there is a strong recognition of the need for specific training beyond generalist awards.* This study shows that nearly 60% had undertaken such activities, almost all had found them relevant, and three quarters believe further professional development is essential or important for them. There is therefore both a sound base and a receptive climate for continuing professional development.

Secondly, within this context, *there are clearly identified training needs.* This study shows that there is a widespread, though not particularly a strong, training need as expressed at the general level of unit of competence: approximately one-third acknowledge a training gap between actual ability and required ability. There are also strong training needs in various knowledge and skill areas that underpin performance in the crime prevention field. This study reveals that though the need is spread across both knowledge and skill areas, and though skills are generally judged more highly in importance than knowledge, the training need is stronger in the knowledge areas.

Thirdly, given a receptive climate and a strong training need, *there are preferences for how and by whom any further training/professional development is made available.* This study pinpoints seminars/workshops in their own towns or cities, or in regional areas, followed by self-directed learning packages and national workshops, as the most strongly preferred approaches, and universities as the most preferred provider. Whatever professional development becomes available, there is a clear need expressed for the potential for accreditation, or at least official recognition of some kind, to be built into programs.

These findings have *significant implications* for the training of practitioners new to crime prevention. One is that the skills identified in this study, and perceived by practitioners already in the field to be of high importance, either need to be developed prior to entry through similar work, and be recognised, or they need to be built into induction and early professional development programs. Another is that the specialist knowledge identified in this study needs to be the main focus of continuing professional development programs, as it constitutes a key component in crime prevention work as distinct from other human services work, rating highly in the reported training needs of existing practitioners.

The large variations in training needs by sample characteristics (detailed in the full report) are also very significant. They highlight that any assessment of training needs is not a simple process methodologically, nor is the importance of key demographic data to be downplayed. Designers of training programs and providers of professional development have to consider carefully not only the extent of the need and the nature of the need, but also who in particular articulates that need. The results from this national survey constitute benchmark data from which designers and providers might best offer training/ professional development for new and existing practitioners in this newly emerging field.

A number of significant questions now remain in the researchers' minds. To what extent and in what ways will this research influence policy and practice? Will there be follow-up by NCAVAC, NACS officers and others involved in crime and violence prevention in Australia? How many of the report's 23 recommendations will be acted upon? Will the report's detailed quantitative information on training needs and priorities be used for the development of learning and training materials within the current National Training Framework? Will the extensive database of crime prevention practitioners be continuously updated?

Such follow-up is crucial to the success of the project. As Bradley, Kallick and Regan (1991, p68) warn, "This may seem self-evident, but we would be wealthy if we had one dollar for every needs assessment process that was undertaken and the data not used". At this stage, all the researchers know at this time is that NCAVAC is about to publish the report and that it has already been distributed to NACS officers in each jurisdiction and the published report will be further distributed as a 'public document'.

In summary, the research team sought to contextualise the findings of the research in a period of restructuring and reinventing of government being experienced throughout Australia influenced by globalisation, and leading to substantial uncertainty in the community, dramatic and volatile changes in the workforce and a restructuring of the form and function of government.

The researchers conclude that crime prevention is not exceptional in experiencing this change and is not likely to be an orphan in demonstrating diversity, ambiguity, the absence of a recognised structure, and conflicts over means and ends. The way now remains open for future researchers to build on the material provided in the full report in expanding the developing body of knowledge about crime prevention as a policy response to crime and the fear of crime in Australia.

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Internet-based training: Do students like it as much as trainers think they should?

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There is much work going on to create online courses. Developers of online materials and online delivery platforms are assuming that learners want this type of delivery. The amount of development going on far outweighs the feedback we have from learners. Work by Gibson (1997), Goldman (1997) and Schutte (1997) have confirmed what developers want to hear; that learners like and benefit from online learning but further data is required to support the massive movement to online education.

This paper reports on student feedback from two trials of Internet-based training at Sydney Institute of Technology in 1997. What makes this report a little different is that it compares the results of two trials run with groups having one main difference; that one was with part-time students and the other was with full-time students. This allows us to makes observations about different groups using the same material under similar circumstances.

Background

Sydney Institute of Technology (SIT) is one of 12 institutes that comprise TAFE NSW, the major provider of vocational education and training (VET) in New South Wales (NSW). The Information Technology teaching section at SIT commenced work on Internet-based training in August 1996 with a small grant from the Australian National Training Authority (ANTA).

The first step was to develop an understanding of Internet-based training and develop a prototype online delivery platform. This work was reported in a paper first presented at the annual conference of the TAFE NSW Research Association in December 1996 (Webb, 1996) and later presented at AusWeb'97 [HREF1].

At the beginning of 1997, work commenced on building an online delivery platform and online educational material for two subjects offered in the Certificate Level 4 in Information Technology (PC Support). The certificate is Australian Qualifications Framework (AQF) Level 4. The subjects are Help Desk Procedures (2481A) and Hardware/Software Selection and Purchasing (2481M). Both are 18-hour modules.

The Help Desk subject was developed first and was offered in Term 2 (May/June) and again in Term 3 (August/September). These offerings were used to capture the students' opinions of the online learning materials, the online teaching and the online learning delivery method.

The trial

The two offerings will be referred to as trial 1 and trial 2. In trial 1 there were 24 part-time students who all had full-time jobs. In trial 2 there were 45 full-time students most of whom had no job. Some had part-time work of a casual nature. Only one had a full-time career job.

Both trials commenced with an induction program consisting of: Introduction to online learning; essential internet skills; effective electronic communication skills; and independent learning skills. This was an attempt to ensure all learners had sufficient skills to cope with online learning.

Both trials used students who had enrolled in courses with the expectation of studying all subjects face-to-face. The Help Desk subject was only offered online. Fortunately, most learners were very receptive to the idea of trying online learning as it involved the Internet. A few students were apprehensive and needed further encouragement during the induction sessions.

All the learning materials for the Help Desk subject were loaded onto the SIT Information Technology web server (HREF2) and, after the initial induction programs, there were no scheduled classes. Students could access the learning materials via the Internet from home, from the workplace or from the labs provided at the college. During the first trial students printed their own lesson material from the web site but during the second trial, when most students relied on the student lab for access, the teacher made printed copies of the materials available to reduce the load on the overworked lab printer.

The Help Desk subject consisted of six lesson units: two theory, two practical, one excursion and one assessment preparation.

The excursion required the learner to visit a help desk site. Learners could organise their own or attend one that was organised by the teacher. In both trials, most students chose to attend the site visit organised by the teacher.

The Help Desk subject has two prescribed assessment events: a practical test and a short answer written test. There was no attempt to convert the practical test to the online environment and students were required to attend a scheduled practical test at the college as they would for a face-to-face delivery. The short answer written test, which is normally supervised, was converted to a 'take-home-test' format but assessed to the same criteria of the normal written test. Authenticity of the person doing the test was addressed by getting the students to sign a sworn declaration and by making the test of an 'individual' nature.

Students studying the Help Desk subject were also studying other subjects which were taught face-to-face. As a consequence they were not isolated from other students in the same way distance learners would be. Student feedback was captured with a combined quantitative and qualitative questionnaire. It was given at the same time as the Help Desk practical test which occurred at the end of the timetabled period for the subject. Most students completed the questionnaire before sitting the test although a few took it home and returned it later. This explains the extraordinary response rate of 100% for the first trial and 98% for the second.Table 1 details the response data.

Table 1: Response data

Response Data	Trial 1	Trial 2
No. of enrolled students	24	45
No. of respondents	24	44
Response rate	100%	98%

Findings

This section provides *details about the respondents* including gender, first language spoken at home, primary location for Internet access and satisfaction level with method of access.

The gender of respondents in both trials is shown in Table 2. This data was obtained from the roll books as there was no question on gender in the questionnaire.

Table 2: Gender of respondents

Gender of Respondents	Trial 1 No (%)	Trial 2 No (%)
Female	10 (42%)	12 (27%)
Male	14 (58%)	33 (73%)

Many students attending Sydney Institute of Technology are from non-English speaking backgrounds (NESB). Table 3 shows the proportion from non-English speaking backgrounds in both trials. In the second trial, two out of three students were NESB. This is explained by the fact that of the three groups comprising the second trial, one group was a special class of overseas students. If the special class is removed from the figures for the second trial the proportions of English-speaking background to non-English speaking background is 16 (59%) to 11 (41%) which is more in line with the first trial.

Table 3: Main language used at home

Main Language Used at Home	Trial 1 No (%)	Trial 2 No (%)
English	17 (71%)	16 (36%)
Languages other than English	7 (29%)	29 (64%)

The first trial consisted of students who were in full-time employment. As expected most chose to access the online materials from off-campus, either from home or from work. In the second trial, where nearly all students did not have career jobs, 60% were reliant on on-campus access. Only two students in the first trial were reliant on on-campus labs. Table 4 shows how students accessed the learning materials.

Table 4: Access method to learning materials

Access Method to Learning Materials	Trial 1 No (%)	Trial 2 No (%)
From home	13 (54%)	24 (53%)
From work	12 (50%)	3 (7%)
Other	3 (13%)	27 (60%)

There is some overlap in the figures as some students would have accessed the materials from more than one location. While 'other' is mainly on-campus access, one student in the first trial relied on an Internet cafe and a friend's computer for access.

Access to learning materials and access to electronic communications is vital for Internet-based delivery. If access is too slow, unreliable or inconvenient it will impair the learning process. Students were asked to rate *their level of satisfaction with their chosen method of Internet access*. Table 5 shows levels of satisfaction.

Table 5: Internet access satisfaction level

Internet Access Satisfaction Level	Trial 1 No (%)	Trial 2 No (%)
Extremely good	10 (42%)	10 (22%)
Satisfactory	10 (42%)	20 (44%)
Okay	2 (8%)	11 (24%)
Unsatisfactory	2 (8%)	2 (4%)
Extremely poor	0 (0%)	0 (0%)

It can be concluded that most students (92% in trial 1 and 90% in trial 2) found their access workable (ratings 'okay', 'satisfactory' or 'extremely good'). The students were asked to *rate the online learning materials*. Table 6 shows the overall rating in both trials.

Table 6: Overall rating of Help Desk materials

Overall Rating of Help Desk Materials	Trial 1 No (%)	Trial 2 No (%)
Good	18 (75%)	25 (57%)
Okay	5 (21%)	12 (27%)
Poor	0 (0%)	0 (0%)

It was heartening to find that no-one found the learning materials unsatisfactory although one person in the first trial and seven in the second trial didn't answer this question. In some cultures it is unacceptable to criticise teachers; some members of the special class of overseas students may account for the large number of non-responses to this question and others like it in the second trial.

Students were also asked *which lesson they liked best and which one least.* Tables 7 and 8 show the students' responses. (Lessons 1 and 2 were theory, 2 and 3 were practical and 5 was the site visit.)

Table 7: Lesson liked best for content

Lesson Liked Best For Content	Trial 1 No (%)	Trial 2 No (%)
Lesson 1	3 (13%)	2 (5%)
Lesson 2	2 (8%)	9 (20%)
Lesson 3	4 (17%)	12 (27%)
Lesson 4	3 (13%)	5 (11%)
Lesson 5	9 (38%)	7 (16%)

Table 8: Lesson liked least for content

Lesson Liked Least for Content	Trial 1 No (%)	Trial 2 No (%)
Lesson 1	8 (33%)	9 (20%)
Lesson 2	2 (8%)	2 (5%)
Lesson 3	4 (17%)	6 (14%)
Lesson 4	1 (4%)	5 (11%)
Lesson 5	1 (4%)	7 (16%)

In the first trial the most liked lesson was number five which was the site visit. In the second trial the most liked lesson was number 3 which was the first practical lesson. One possible explanation for this disparity is age. While respondents were not asked for their age I can report that the students in the first trial, who were all part-timers, were mostly mature-aged whereas the students in the second trial, who were full-timers, had a typical age of late teens to early twenties. It is likely that the mature-aged learners appreciated seeing another workplace whereas the younger learners were pleased to do some practical, hands-on work.

Students from both trials agreed that the worst lesson was the first. Almost certainly this arises from the combination of a new subject and a totally new learning method. The lesson for developers of online learning materials is, make the first lesson easy and enjoyable so that the learner is drawn in slowly.

Induction sessions were run to ensure students had the basic skills for online learning. In the questionnaire, students were asked *how useful they thought the induction sessions* were overall. The results are shown in Table 9.

Table 9: Usefulness of induction sessions overall

Usefulness of Induction Sessions Overall	Trial 1 No (%)	Trial 2 No (%)
Very useful	17 (71%)	9 (21%)
Okay	7 (29%)	21 (48%)
Not very useful	0 (0%)	0 (0%)

In both trials, significant numbers of students found the induction session useful (rating 'okay' or 'very useful'); 100% in trial 1 and 70% in trial 2. However, in trial 2 students were less enthusiastic about the induction: only 21% of students in trial 2 rated the induction 'very useful' compared to 71% in trial 1. The explanation is likely to be that the format of the two inductions was quite different. The first induction session was comprised of two four-hour sessions plus a one day workshop. In addition, students picked up enough credit to gain another subject. The second induction was comprised of two two-hour sessions only and was additional work for which there was no credit.

The sessions were tailored to different requirements but this result suggests that a longer, more thoughtful induction session is required. In addition to overall rating of the induction session, students were asked if the components of the induction were relevant or not. Tables 10, 11, 12 and 13 show how students rated the relevance of the four parts of the induction: online learning overview; independent learning skills; essential Internet skills and effective electronic communication.

Table 10: Online learning overview

Online Learning Overview	Trial 1 No (%)	Trial 2 No (%)
Relevant	19 (79%)	26 (59%)
Undecided	5 (21%)	4 (9%)
Not relevant	0 (0%)	1 (2%)

Table 11: Independent learning skills

Independent Learning Skills	Trial 1 No (%)	Trial 2 No (%)
Relevant	16 (67%)	26 (59%)
Undecided	5 (21%)	3 (7%)
Not relevant	3 (13%)	2 (5%)

Table 12: Essential Internet skills

Essential Internet Skills	Trial 1 No (%)	Trial 2 No (%)
Relevant	23 (96%)	25 (57%)
Undecided	0 (0%)	3 (7%)
Not relevant	1 (4%)	2 (5%)

Table 13: Effective electronic communications

Effective Electronic Communications	Trial 1 No (%)	Trial 2 No (%)
Relevant	21 (88%)	20 (46%)
Undecided	2 (8%)	5 (11%)
Not relevant	1 (4%)	5 (11%)

Both trials ranked all four parts of the induction process as relevant. Enthusiasm was more pronounced in the first trial than the second. For example, 96% of respondents in the first trial thought essential Internet skills relevant but only 57% in the second trial thought the same. The disparity is probably explained by the fewer number of respondents in the second trial answering questions which are critical of the teacher and the teaching methods.

The responses to these questions about induction confirm our intuition about the necessity to prepare students for online learning.

Adequacy of online teaching

This section contains data about the online teaching of the Help Desk subject in terms of contacting the online teacher and the online teacher's ability to resolve issues in the online environment. Online teachers are not found in a specific location at a specified time of the week. They can be contacted by e-mail, telephone, fax or at the college. They are 'always' available but they may take a little while to respond.

As the online teacher I made it known that e-mail was the best way to contact me. I committed myself to checking e-mail everyday and responding to students within 24 hours. Even so, some students continually tried to track me down at the college, often without success. Students were asked, 'Were you able to contact your teacher when you need to?' Table 14 shows the responses.

Table 14: Contacting the online teacher

Contacting the Online Teacher	Trial 1 No (%)	Trial 2 No (%)
Always	15 (63%)	18 (41%)
Usually	8 (33%)	17 (39%)
Seldom	1 (4%)	6 (14%)
Never	0 (0%)	1 (2%)

The majority of students in both trials thought I was contactable 'always' or 'usually': 96% in the first trial, 80% in the second. Students in the second trial had a less than ideal experience contacting me. I think this arose because the students were attending the college for three or four days a week and found it more convenient to drop by my office than to send an e-mail. Less than perfect satisfaction probably arose due to failed instances of contact. On the other hand the part-timers in the first trial were much less likely to expect me to be in the college during the evenings.

Student contact with teachers is an extremely important part of the teaching/learning process. E-mail contact lacks the responsiveness of face-to-face contact but has the advantage that it is not confined to a narrow window of opportunity each week. The asynchronous nature of e-mail allows contact to be initiated and responses made at any time of the day or night. Students often work late into the evening and on a number of occasions I deferred going to bed at my normal time because of messages arriving just as I went to turn my computer off. As students and teachers get more familiar with e-mail and can access the Internet from a variety of locations, this should become their preferred means of contact with one another.

Part of online teaching is being able to answer questions effectively through e-mail. Students were asked how well I was able to help with difficulties in the lesson material. Table 15 shows their responses.

Table 15: Help with difficulties in the lesson materials

Help with Difficulties in the Lesson Materials	Trial 1 No (%)	Trial 2 No (%)
Always	13 (54%)	26 (59%)
Usually	8 (33%)	12 (27%)
Seldom	0 (0%)	2 (5%)
Never	1 (4%)	0 (0%)

In both trials the vast majority of students thought I always or usually dealt with issues in the learning materials. This shows that I was able to passably deal with difficulties in the online environment. As developers we believe learners should be able to learn in an online environment and have never questioned our own ability to teach in the environment. These limited questions demonstrate that online teaching is possible. The question is, can all teachers automatically teach in an online environment, or will it be like the classroom where some do a better job than others. Does a good face-to-face teacher necessarily make a good online teacher? These are questions that should be examined before we get too far down the online education-for-all path.

Ability to cope with online learning

Students were asked, 'How did you find learning from self-paced materials instead of the usual classroom face-to-face techniques?' Table 16 shows the responses.

Table 16: Learning from self-paced materials

Learning from Self-Paced Materials	Trial 1 No (%)	Trial 2 No (%)
Liked it	16 (67%)	22 (50%)
Okay	5 (21%)	18 (41%)
Didn't like it	3 (12%)	1 (2%)

As the learning occurs largely by studying self-paced materials I have permitted myself to interpret the students' attitude to self-paced materials as their attitude to online learning. In both trials at least half the students positively liked online learning: 67% in trial 1; 50% in trial 2. In trial 1, 21% were indifferent to online learning and 12% positively didn't like it. In trial 2, 41% were indifferent and 2% positively didn't like it. It is reassuring to see that the vast majority of students don't mind online learning: 88% in trial 1 and 91% in trial 2.

Students were asked to explain why they liked, disliked or were indifferent to online learning. Tables 17, 18 and 19 contain a representative selection of the reasons given.

Table 17: Reasons why online learning is liked

Trial 1	Trial 2
It is very convenient not to go to class and just learn from the web site.	Time is not wasted coming to listen to a class and going back home.
Yes! I found it was good because you could work during the hours that best suited you.	I liked it because now I know that I can learn things on my own and I'm able to organise myself better.
Convenience - especially working full-time.	I liked the flexibility. I was able to work when I had some spare time.
Because you can have access to all the relevant materials needed for the subject at any time, this gives you the ability to better manage your time.	1. I learn how to use the computer and the Internet 2. I can save more time than face-to-face 3. I can study more than in the class time.
You access the material any time day or night.	I liked it because as well as learning the subject matter you were learning and improving other skills.
It forced you to sit down and read the content, dial in and read e-mail, use the Internet and to send in assignments - it made you do it. The time and deadlines were flexible.	If I wanted to work ahead I could. I didn't have to slow down to accommodate someone who didn't 'get it'.
Did it in my own time at my own pace. Was not distracted by other students so felt I got through material quicker.	Whenever you come across a problem you can contact your online teacher for a solution.
Some time I did no units, then I was able to do two together (I missed a week because I was sick).	That we could assign our times to study and do our research.
Allowed me to [work at my own pace], worked through it in sessions instead of in one hit.	We're using the latest technology (Internet, e-mail).

Table 18: Reasons why online learning is disliked

Trial 1	Trial 2
It was a bit inconvenient for me. I don't have a personal e-mail address. I have to access it through my boss's computer...when he is not using it.	More difficult than face-to-face lesson. I did not catch up with the progress of the subject, I got behind.
I missed the interaction with other students - the interaction of ideas. I felt you couldn't share experiences. I also felt more pressured studying this way because my Internet access was at work and I had to stay back to print material, and read and send e-mail.	
Okay for student with Internet access from home.	

Table 19: Reasons why online learning is okay

Trial 1	Trial 2
It was okay, but it's not for me. I really like talking to people, not just reading.	I am simply not used to this method of teaching and I found it a bit confusing at the beginning.
I didn't like all the reading and assignments each week.	I thought it was quite flexible, but sometimes I had to push myself a little to do the work. I kept putting it off sometimes.
I liked the teaching method; I disliked the on-campus Internet access.	Because of my English problem I like face-to-face. This can improve my listening skills.
I would still prefer to have some face-to-face contact with the teacher.	Face-to-face is better because I can understand a bit easier and faster.
I liked to work at my own pace. I disliked when a problem arose, instead of getting quick help from the teacher or other students, you need to wait for e-mail to see the solution.	I liked it but my English is not good unfortunately. Writing and reading were very hard for me.
	Difficult to read from screen.
	I couldn't keep myself up with the schedule.
	If face-to-face, I can get request and answer straightway.

This is useful data for anyone designing an online delivery education program. The points I think come out of these free form answers are:

- Students like the flexibility it gives them;
- International students may have more problems with online delivery as it puts a greater emphasis on their reading skills than face-to-face delivery; and
- The issue of convenient Internet access must be solved before commencing online study otherwise it mars the whole learning process.

Incidental learning

Students were asked if they had learnt about anything other than help desk. Most students in both trials said that they had learnt:

- How to use e-mail;
- How to use the Internet through the world wide web;
- How to communicate effectively; and
- How to study independently.

This is very pleasing as it confirmed our belief that several Mayer key competencies (AEC Mayer Committee, 1992) could be learnt as a by-product of online learning (Webb 1996, p. 188). Table 20 contains some typical remarks made by respondents.

Table 20: Other things learnt

Trial 1	Trial 2
I learn how to use the Internet more efficiently and the e-mail facility.	How to communicate with other people.
Downloading software, Internet, resolving problems with Internet access, printing, e-mailing and other software applications.	Yes, this type of learning also teaches self-motivation, time management and Internet skills.
Yes, communication using modem technology and time management.	E-mail knowledge and Internet knowledge
To allocate time for study.	E-mail, access to the Internet and how to do research via the Internet.

Learner preference for online delivery or face-to-face delivery

The final question on the questionnaire asked learners, 'If a subject was offered by both online delivery and face-to-face delivery, which would you choose?' Table 21 shows the responses in the two trials.

Table 21: Which would you choose, online or face-to-face?

Which Would You Choose, Online or Face-to-Face?	Trial 1 No (%)	Trial 2 No (%)
Online delivery	16 (67%)	24 (55%)
Face-to-face delivery	6 (25%)	15 (34%)

In both trials, learners preferred online delivery to face-to-face, however, the preference was stronger with the part-time students (67%) than it was with the full-time students (55%). It is likely that the part-timers, who had full time jobs, felt that the flexibility offered by online learning far outweighed any other disadvantages of online learning, whereas the full-timers, who did not have such strong competition for their time, were able to compare the two delivery methods on their individual merits.

Conclusion

This paper has discussed the results of two similar surveys which canvassed students' views on online learning materials, online teaching and online learning. The difference between the samples was that one was composed of part-time students with full-time jobs whereas the second was composed of full-time students without career jobs. The part-time students were strongly in favour of online learning whereas the full-time students while keen were not as enthusiastic. It would seem that the flexibility offered by online learning far out-weighs any disadvantages for groups that are pressed for time or that may have other constraints such as opportunity. The caution for educators is that they should check their target audience first before jumping in to all-online-delivery. After all, it is well known that distance education does not suit all learners and online delivery is heavily dependent on distance education techniques.

The learners in the two surveys strongly believed that an induction program was necessary to prepare them for online learning. These programs should be a foundation subject or session that leads into subjects delivered online and not extra studies bolted onto the front of a subject that needs the preparation.

The students that positively didn't like online learning were the ones that had inadequate access to the Internet. Adequate access is reliable, convenient and not slow. Students should not start online learning without adequate access or it will mar their learning experience.

Other factors that put students off online delivery are inability to cope with independent learning and mature English reading skills. Students that would not cope with distance education should not be subjected to online learning. Students without fully developed English reading skills will be severely challenged by online delivery. In the second trial, which included a group of overseas students, some of the reasons given for not being strongly in favour of online learning was that language was a bigger barrier to learning in the online environment than it is in the classroom.

Developers of online learning materials are advised to make their first lesson unit easy and short so that learners new to the online delivery environment are drawn in. In the two surveys, the first lesson unit was consistently voted the least likeable.

It is currently assumed that if you are interested in the Internet then you will make a good online teacher. My students were generally satisfied with my online teaching but we really need to know what is required of online teaching so that we can start training or selecting those that will do it.

The online teacher is 'always' available. What does this mean in terms of time sheets and expected work practices. Online teaching can be performed anywhere: from home, from out-of town, from overseas as well as on-campus. Current arrangements are, at best, informal. Educational authorities pushing flexible delivery must also start considering more flexible work practices.

Why do students like online delivery? It would seem that they like the flexibility they gain as learners and also the incidental learning they gain from independent study and using new technology.

Note. The author would like to gratefully acknowledge the support of the ANTA National Flexible Delivery Program, the Sydney Institute of Technology Initiative Fund and the TAFE NSW ITAM Educational Support Consortium without which the Help Desk subject, the online delivery platform and the access to the Internet would not have been possible. The author also wishes to thank Jill Marcus of the Sydney Institute of Technology Educational Planning and Development Unit for creating the Access database and organising the data entry.

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Getting the message out: disseminating the products of the national managed research and evaluation program

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Previous reviews of the Vocational Education and Training (VET) research effort (eg McDonald et al 1993) have noted the need for development of what has been called a 'research culture' in VET, and that one of the key first steps in achieving this will be the effective dissemination of research. They argue "there is a clear need for fresh ways of disseminating the fruits of vocational education and training research and development so that they become more relevant to, and are seen to be more relevant to, the needs of practitioners and policymakers (McDonald et al 1993).

A nationally-funded project on the impact of VET research on decision making and policy formulation has noted that there is no linear relationship between these various factors. However research may be used by, and have some degree of influence over, the views, practices and policies of VET stakeholders. This report (Selby Smith et al in press) notes the need for a web of linkages between those conducting research and the various groups who make use of the research they produce. It has therefore been acknowledged that, in the past, the outcomes of VET's research and evaluation program have not always been available to key shareholder groups in forms that are useful to them. However, the national research and evaluation strategy (NCVER 1997) aims to put stakeholders first and design approaches to the dissemination of research outcomes which best meet their various and varying information needs.

The capture of current and past VET research and the dissemination of the findings so that the research is more visible and potentially useful are key components of the national research and evaluation strategy for vocational education and training in Australia. This strategy advises both the national managed program administered by the NCVER and the NCVER's own core research.

In the past the great majority of research funds available have been spent on "doing" VET research. Under the strategy the majority of funds will still be spent on doing research; however a greatly increased proportion will be spent on disseminating the primary products of research as well as developing and disseminating a variety of derived products. In such cases the outcomes and findings of a range of projects are combined and summarised in order to target the needs of specific shareholder groups.

This background paper will: outline the objectives and underpinning principles of the dissemination approach; briefly describe the range of approaches proposed; and provide some information about how the dissemination approach will be implemented.

The dissemination - objectives and principles

The dissemination approach has four broad objectives. These are:

- Better **design** of products and services based on stakeholder requirements;
- Better **utilisation** of the products and services provided under the auspices of the strategy and for its different stakeholders;
- Improved **accessibility** to research and evaluation information for all stakeholders; and
- Increased **visibility** of research and evaluation information, with the consequent increase in the extent to which such information is used.

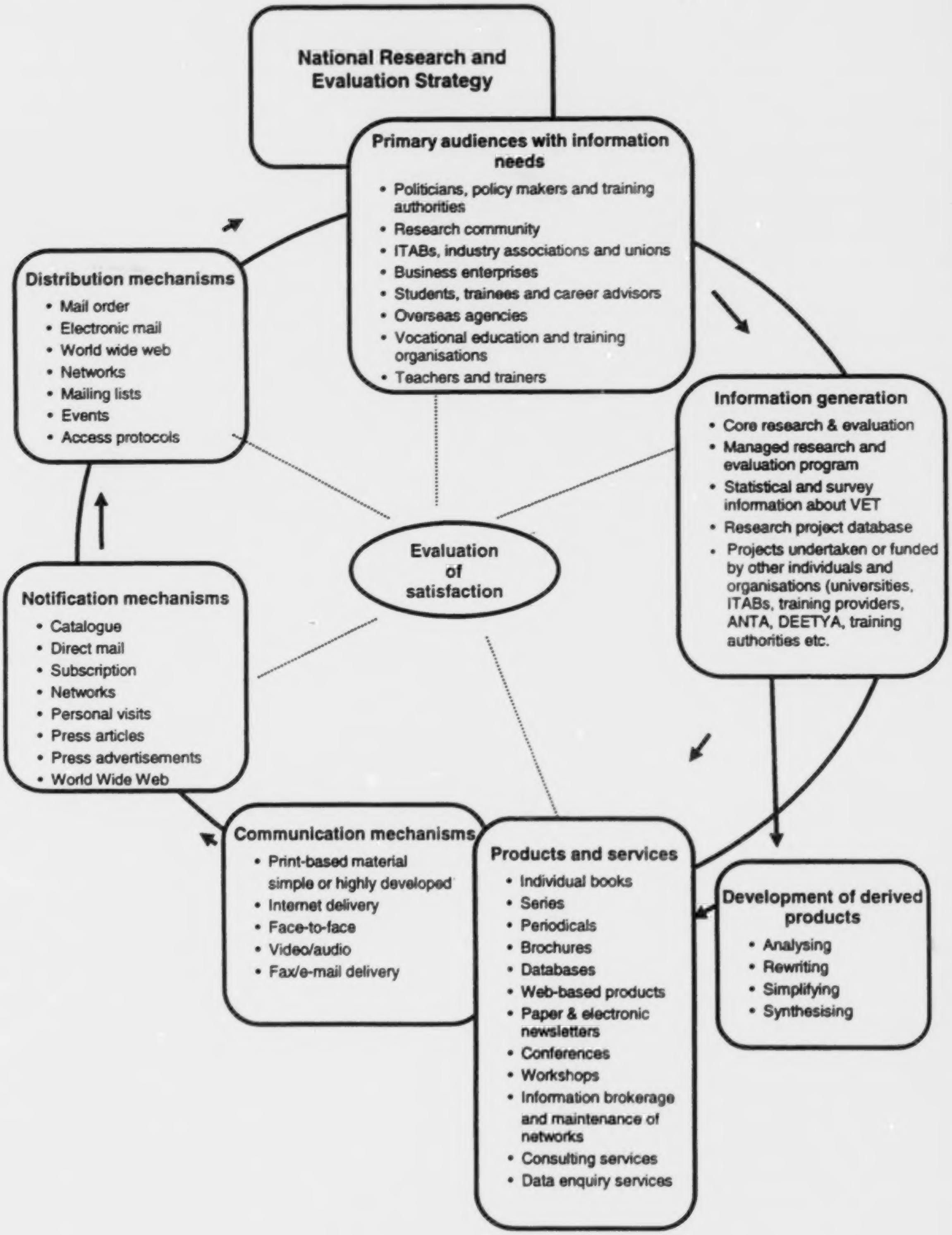
The dissemination approach being adopted by NCVER has three important underpinning principles:

- A clear understanding of who the stakeholders are in the overall research and evaluation program. The dissemination approach needs to recognise that individual priorities and projects will be important to different stakeholders, and even different subgroups within the broader categories of stakeholders. Therefore, the ways in which these stakeholders like to receive this information needs to be clearly understood and catered for when dissemination is being planned. In short the dissemination process must be stakeholder focussed.
- The variety of stakeholders, their various information needs and preferred ways of receiving information potentially require a wide range of products and services to be developed. Thus the dissemination approach for the strategy could be said to occupy a range of specific and carefully identified stakeholder "markets". The dissemination approaches chosen need to be carefully planned to obtain an appropriate balance between the costs of producing them and the extent to which they are taken up and used by the intended stakeholder groups.
- The variety of stakeholders and products will require the development of a supporting production and dissemination infrastructure drawn both from within and outside the NCVER. This infrastructure must also make best use of the dissemination arrangements controlled by the stakeholder groups themselves.

Figure 1 overleaf outlines the marketing components of an approach to dissemination. They involve:

- the **primary audiences** (or stakeholders) and their information needs. These are fundamentally the same as those outlined in the national research and evaluation strategy (see appendix 1);
- the **mechanisms** through which information is generated, including both the managed national program of research and evaluation work and the NCVER's own in-house program. Both of these are advised by the strategy and its associated workplan prepared for the National Research and Evaluation Committee (NREC). Research conducted or funded by other players may also feed in and be incorporated within the dissemination framework - and this is where the need for a strong support of the VOCED database by researchers comes in!
- a set of **primary products**, arising from the research approaches adopted (usually reports, academic papers or other articles) and a range of **derived products and services** which involve analysing, targeting, reworking, simplifying and synthesising the primary research products. It may also involve using a variety of different authors and media. These products and services are tailored to meet the needs of stakeholders. In this way NCVER, in collaboration with researchers and other individuals and groups, is acting very much in the brokerage role described by Selby Smith et al. (in press). To that end, increased amounts will be spent on fulfilling this brokerage role. However, there needs to be more research into what the preferred products and services of the stakeholders are, and how they should be delivered. Moreover, little work has been done in relation to the relative costs of the various dissemination approaches;
- a series of **notification and distribution mechanisms** so that stakeholders are aware of what is available and when, where and how it can be obtained. These are important underpinning components of the dissemination approach to ensure that information is readily available in appropriate forms and formats. Again, VOCED and other information sources and networks are important sources of this information.
- the **on-going evaluation** of the products and services produced under the auspices of the national managed research and evaluation program to ensure that there is a genuine dialogue between those providing and those using the information so the products and services are meeting stakeholder needs and that the dissemination approaches used are appropriate and cost effective.

Figure 1


National Research and Evaluation Strategy
Primary audiences with information needs
• Politicians, policy makers and training authorities
• Research community
• ITABs, industry associations and unions
• Business enterprises
• Students, trainees and career advisors
• Overseas agencies
• Vocational education and training organisations
• Teachers and trainers
Information generation
• Core research & evaluation
• Managed research and evaluation program
• Statistical and survey information about VET
• Research project database
• Projects undertaken or funded by other individuals and organisations (universities, ITABs, training providers, ANTA, DEETYA, training authorities etc.
Development of derived products
• Analysing
• Rewriting
• Simplifying
• Synthesising
Products and services
• Individual books
• Series
• Periodicals
• Brochures
• Databases
• Web-based products
• Paper & electronic newsletters
• Conferences
• Workshops
• Information brokerage and maintenance of networks
• Consulting services
• Data enquiry services
Communication mechanisms
• Print-based material simple or highly developed
• Internet delivery
• Face-to-face
• Video/audio
• Fax/e-mail delivery
Notification mechanisms
• Catalogue
• Direct mail
• Subscription
• Networks
• Personal visits
• Press articles
• Press advertisements
• World Wide Web
Distribution mechanisms
• Mail order
• Electronic mail
• World wide web
• Networks
• Mailing lists
• Events
• Access protocols
Evaluation of satisfaction

Doing dissemination – the next steps

The range of stakeholders groups has been outlined both in Figure 1 above and in the national research and evaluation strategy itself. (See appendix 1 and NCVER 1997). In implementing the dissemination approach, a number of activities are clearly called for. These include:

Conducting market research . Such research is required to obtain a clearer understanding of the information needs and preferred dissemination approaches of key stakeholders. It will also examine their ability to access a variety of information sources (eg the World Wide Web) and try to gather examples of good practice to advise product design and dissemination approaches. This research will also assess the planning processes we are beginning to develop. Finally the approach will also use focus groups to "test out" the recommended marketing approaches. Benchmarking and on-going evaluation will be used to refine and improve processes.

Planning dissemination approaches. The development and dissemination of research and evaluation project needs to take place within a planned framework. The framework begins with the strategy and is refined in project proposals received and selected for funding. Individual utilisation plans are needed for each project, as well as for each of the six research priorities forming part of the strategy. Thus each project is disseminated and used in its own right but, more importantly, it is part of a greater whole. (We used the word utilisation in the national strategy purposefully to remind ourselves constantly that dissemination is more about helping to ensure that research information and findings are *used* rather that merely *provided*). This is also why the issue of the ownership of the contracted material produced by the projects funded under the auspices of the national managed program is so important.

We will be developing utilisation plans with each project, a number of which may have implications for funding which go beyond initial contracts to produce primary and some derived products. We are beginning to think about the processes for developing such plans as well as keeping them under review in collaboration with the project teams and our own publications staff. In addition further plans are needed for the production of the derived products and services which feed off the research process and the primary products it generates. The simplest examples of such products are the stocktakes or "Reviews of Research" which summarise and critically examine the research in particular areas. However even these products may be further refined to develop such products as a "Research at a Glance". A pilot for such a series is currently in preparation, and is focussing on training and small business. If successful at least three further products in this series will be produced in 1998.

Developing a range of products and services. The strategy outlines a comprehensive range of possible products and services which will be used individually or in combination to disseminate the findings of the projects funded through the national managed research and evaluation program. Processes for delivery of products face-to-face (for example through workshops and research roadshows or briefing sessions to particular interest groups) need to be developed. In addition a house style needs to be developed for the various products based on the findings of the market research which I have already briefly mentioned. Opportunities also need to be explored to place copy relating to project outcomes and consolidated findings in key priority areas in a range of newsletters and provide materials and other services which can feed into the other dissemination products and processes controlled by stakeholder groups themselves.

A spectrum of potential processes is described in Figure 1. The notion of a research "hot line" was also mentioned in the strategy. This requires considerable development of underpinning databases and information services to have any chance of success and ensure that linkages between interest groups and individuals is possible.

Over the next year, and following the market research outlined above, opportunities will be sought to develop, disseminate and evaluate a range of new products and services. This developmental stage offers an exciting potential both for NCVER and for those who are actively involved in the research process.

Developing the infrastructure to support product development and dissemination. The development of the dissemination role across the range of research activities is an important new initiative. This has fundamental implications for the organisation of NCVER's own production and marketing functions, as well as the role and ways in which more specialised resources outside NCVER itself, are used.

The massive increase in the range of products and services funded through the managed national research and evaluation program will have resource implications which need to be addressed by an appropriate balance of in-house infrastructure and outsourced services. This will ensure that the products of research are available when they are needed. In addition there need to be improvements in the notification and distribution mechanisms currently used to ensure that stakeholders have opportunities to seek information or are notified of and can receive relevant products in a timely fashion.

The utilisation plans for the primary and derived products of each project funded through the national managed research and evaluation program will require a considerable increase in the number and range of products and services developed both within the NCVER and externally to ensure that products and services are produced, 'marketed' and distributed expeditiously. This means that timelines are critical and that researchers will need to stick religiously to agreed schedules to ensure that products for which they are responsible are available in appropriate formats, to a quality standard and in a style which ensures that the minimum amount of work is needed to make these available to interested stakeholders.

The development of infrastructure also implies the need to develop, maintain and even enhance appropriate databases to assist in the processes of modification and dissemination. Databases controlled and used by other organisations and groups can also be used to assist the dissemination process.

Improving the capture of Australian research. While there has been a lot of research conducted over the year into various aspects of VET in Australia. (The recently completed project on the impact of VET research located a list of at least 1068 projects and project reports.) This research has varied from the very visible and public to that which was conducted for particular bodies but is now available more widely. Yet other research exists within the corporate memory, but is the stuff of myth and legend.

Therefore another key infrastructure issue which underpins the information dissemination role is ensuring that as much of the research and evaluation work being undertaken across the VET sector as possible is being captured and incorporated on the VOCED database. This will ensure that information about research in progress, as well as completed research, is available to the broadest range of stakeholder groups. The improved access to the VOCED database through the World Wide Web is of particular relevance because the database is now not just something which might have been locked away in a library. While it may not have been a visible and accessible resource in the past, it certainly is now. Moreover, its presence on the web gives Australian VET research a stronger international presence.

An important part of our dissemination approach, therefore, is to encourage and help ensure that researchers make use of and actively contribute to the VOCED database. In this way we hope to ensure that new research is documented and therefore more readily available to those who need to have access to it and use it. The process may also promote access to and linkages with those who are conducting, or have conducted, the research.

Conclusion

Improving and developing the dissemination approaches for the managed program of research and evaluation work in VET will be an important part of NCVER's management role of the process during this year. The NCVER and researchers, particularly those who are recipients of project funds, need to work closely together to ensure the best possible dissemination of findings. This means that the research information and products need to: be carefully targeted; be relevant to the needs of particular stakeholders; be well designed and produced; and provide clear and timely messages.

The products need to be disseminated in ways and in forms which ensure that they are known of and available to those who would most benefit from the information the research contains. In this way linkages between the creators and the various users of the research can be developed, promoted and enhanced.

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What do we mean 'research influences policy'?

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The topic of the conference invites us to show that our research does 'influence policy and practice'. This suggests that the important relationships are mostly one way - in the direction of policy. I take this to signify that there are core assumptions of policy instrumentalism shaping the emerging VET research culture. My difficulty is not with the idea that research should influence policy but with an uncritical acceptance of the conditions of policy work when there ought to be a vigorous questioning of those conditions.

A preoccupation with 'policy impact' begs questions about the way policy agendas and processes construct VET research. If we frame the problem as 'policy impact', we deny inquiry into the way a changing policy context determines the nature of VET research. Indeed, we know as VET researchers that there would be no 'VET research' without the decisive intervention of the state in education and training policy and its sponsorship of strategic research through the NREC program. We also know that state training bureaucracies are intensely interested in outcome management in funded research.

Thus I argue that *an engagement with policy* is one of the constitutive features of our research practice and that it is timely for us, in forming a professional association, to acknowledge and begin a critical analysis of the influences that are shaping our research practice. We need to begin to debate what this policy engagement is demanding of us as researchers and to have more debate about the politics of education and training reform which have been driving VET research for a decade. How does our research practice connect to the larger debates about the state and education and social policy?

I will argue that we need to examine the nature of our participation in the policy processes of the reformed education bureaucracies and their new culture of 'corporate managerialism' (Yeatman 1993). It is this which shapes the realities of 'policy impact'. What is significant in this changed political economy of education and training - as it is represented to us through the ANTA NREC funding program, for example - is the demand that research should answer policy agendas. The press for 'useful' research and for 'policy impact' is but one aspect of the 'performativity' of the new bureaucratic cultures which has the potential to discourage a critique of research and policy relationships.

There is a potential for managerial perspectives on research and policy relationships to suborn our critical understanding of the ways in which institutional power is shaping VET research. Those of us who are in universities are implicated in these processes, as the corporatising university is drawn into the state's interventions in education and training, transforming academic research in the process (McIntyre 1997). As researchers we are challenged to problematise the nature of the new research and policy relationships that are creating the new VET research culture. The very policy instrumentalism of that culture should challenge us to take that culture as an object of theoretical and empirical inquiry.

Such analysis will bring VET researchers more into the mainstream of debate on research and policy in education and training eg Husen and Kogan 1984; Finch 1986; Anderson and Biddle 1991; Halpin and Troyna 1994; Ahier and Flude, 1983; Dale 1989; Ball 1990, 1994), a literature to which Australian scholars are making a notable contribution (Marginson 1993, Yeatman 1990, 1993, 1994; Lingard Knight and Porter 1993; Taylor Lingard Rizvi and Henry 1997). This field of work assumes that policy is a researchable domain in its own right, but not one that is constituted as an empiricist 'policy science' on the one hand or an adoption of managerialist perspectives on the other (Troyna 1994:3).

We need to build a better understanding of the way *research and policy relationships* are constructed through the 'real-world' processes of VET research. I will suggest a view of 'research and policy' as mutually shaping under conditions of state intervention in education reform. One point of the paper, therefore, is to encourage debate about how as researchers we might take a greater role in making a self-critical research culture.

What is shaping VET research culture?

To analyse research and policy relationships we need to examine what forces are shaping VET research culture. To do so is to recognise that the 'new' culture has emerged from the culture of the old TAFE bureaucracies and the way they did research. It has to be asked how far the new VET research culture is continuous with the 'old world' and how the reform and restructuring of education and training has shaped a new policy regime.

The TAFE institutional culture was highly instrumental. Research was captive to policy, framed by administrative concerns and often uncritically empiricist in nature. The first TAFE National Centre was (not surprisingly) stamped with this policy empiricism. Education and training reform has challenged this older culture. Reform targets the restructure of public sector organisations and changes the terms of public policy management. It institutes new research agendas, co-opts the academy to perform its research and funds research as a strategic management tool. It is these impacts of policy on research that are currently under-theorised by VET researchers.

The way the old TAFE culture has been changed by 'education reform' amounts to a new political economy of education described by Marginson and others (Marginson 1993, Taylor Rivzi Lingard & Henry 1997). If research is supposed to influence policy, then what are the contemporary conditions which govern this? Among the best answers to this question are given in the work of Yeatman (1990, 1993, 1994) who has theorised a 'bureaucratic cultural revolution' which she terms 'corporate managerialism' (Yeatman 1993), among other themes in her work.

It is only possible here to make reference to part of her complex analysis of the contemporary state. A key point is that substantive policy knowledge of public servants (for example, of health, welfare or education) is subjected to professional management expertise of the 'new class' of professional managers and its technical rationality. 'New class theory' is an important theme in her work.

Yeatman refers to the new public sector managers as a 'technical intelligentsia' who have an 'openness to expert-led value debate' which leads them to seek out all relevant sources of knowledge, though particular value-orientations and 'substantive' policy knowledges are always subordinated to the priorities of management technique (1990:29). The new managers do not commission research only because the 'reformed' bureaucracies have been downsized in public sector reform and therefore lack research capacity. They do so because they frame policy in strategic terms which demands timely and relevant knowledge from whatever source. The contemporary state is an 'interventionist' one which adapts research to its policy management.

This leads to the co-option of academic researchers in policy work. (I do not say 'co-operation' because this puts the wrong gloss on the kind of agency that is entailed in state-sponsored research). Yeatman alludes in one passage to the permeation of the boundary between public administration and academic work, made out in terms of the tensions between 'humanistic intellectuals' of social science research and the 'technical intelligentsia' represented by the new public sector managers:

> It is true that public servants cannot be humanistic intellectuals, at least in the classical, autonomous university -based or self-employed sense, because they lack that degree of cultural autonomy, and are required to accept the authority of professional managers in the public service. This, however, is no longer a simple point of contrast between public servants and, for example, academics. Just as a secular rationalised culture of critical

> reflection has seeped into the public service in the wakes of the ethos of scientific management and the new-classing of the public service, there is also increasing pressure on academics to become, in part at least, a technical intelligentsia servicing the research requirements of industry and the state. In short, a basis for integration between humanistic intellectuals and the technical intelligentsia is developing ... (Yeatman 1990:30)

The point of this is to highlight how 'policy' and 'research' are being linked in the contemporary state in a specific bureaucratic and organisational context which sets conditions not only for the dissemination of research but for its direction and management. Thus I argue that research and policy relationships are constructed by corporate managerialism in specific ways which are conditioned by the imperatives of strategic policy (McIntyre 1997).

Corporate managerialism is thus a policy regime which sets conditions for our research activity. It assumes the political agendas of 'education reform' and commissions research to produce knowledge for policy. In this regime, 'policy' is strategic in character, geared to objectives, benchmarks and timeliness and may be subject to robust debate involving a contest of values. Policy is more dependent on timely and credible research than on the portfolio knowledge and career experience of senior bureaucrats. (For this reason the new regime is indifferent to the erasure of 'corporate memory' resulting from the current restructuring in NSW education that has all but eliminated the idea of a distinctive vocational education department). Academic researchers are thereby drawn into the policy work and interventions of the state, but under conditions which require a modification of the less amenable qualities of academic knowledge. Above all, research is managed to have 'policy impact' because it is constructed by policy imperatives.

It is being scrupulously un-political to suggest that VET researchers ought to try and influence policy and practice when the very conditions under which research is being funded and produced are above all else 'managed' to produce such outcomes. I admit there is a paradox - the new VET researchers are certainly outside the bureaucracy and notably more 'independent' of its agendas than before training reform. But it is precisely the point that (academic) researchers are 'engaged' by policy bureaucrats to produce relevant research, since this leads to a greater integration of the contexts of academic research and state policy.

The terms of this integration are negotiable as they are empirically interesting and researchable, and thus I do not want to overplay the role policy plays in determining VET research. This negotiability is seen in the reciprocal understandings of researchers and bureaucrats. To manage research commissions, the new VET managers need to have understandings of research processes and outputs and manage these to maximise policy impact, while researchers need a grasp of policy frames to generate research perspectives that take these frames into account. Thus the very 'performativity' of policy research under corporate managerialism requires at least shared understandings of the domains of research and policy by researchers and bureaucrats and a negotiation of the scope and nature of research.

The new VET research culture is thoroughly conditioned by a 'discourse of policy' (Usher) that is at present largely unexamined in the field. Again, I am suggesting that there is a reconfiguration of policy-making that challenges the old TAFE instrumentalism in interesting ways. Though some VET bureaucrats (who have as yet escaped the purges of recent memory) may believe that research is the handmaiden to policy and can give answers' to their 'policy problems', the role of research has in fact changed. It is arguable that under corporate managerialism, research perspectives are sought that will conceptualise policy problems as well as provide evidence for possible courses of action. Research answers different policy imperatives.

It is crucial to understand why policy is now 'strategic' in nature. This is because the prime goals of the new culture are an intervention in education and training and other areas of policy designed to reshape public sector institutions for the conditions of economic globalisation. Research, it follows, serves state intervention. This is why we should be debating and researching the nature of VET research and its implication in policy processes - not simply its 'policy impact'.

In this, we cannot avoid theorising the nature of our participation in policy processes through research activity. To seriously ask how research plays a role in policy, we must ask 'what it means to have a policy', as Wickert does in writing of her own experience of policy activism in adult literacy (Wickert forthcoming). This requires nothing less than a deconstruction of one's research practice in terms of the policy discourses, values and ideologies that produce that practice, just as that practice is itself active in shaping policy.

Thus there is some work to be done in analysing what it is that this strategic approach to policy demands of researchers and research knowledge. How do researchers take up policy understandings as they make knowledge available to policy? In what way are 'research perspectives' constituted by policy context?

How should we research policy?

A position we are outlining rejects the assumption that there is a 'problem' of policy impact on which researchers should keep their sights. It is argued that this framing of the problem as 'policy impact' is to take a managerialist perspective on the question of research and policy relationships. Accepting this framing of 'the problem' discourages critical inquiry into the processes by which policy processes are constructing VET research.

But what assumptions would an alternative position make? For a start, it is necessary to reject the kind of frameworks for thinking about research and policy of the kind put forward by Anderson and Biddle in their reader *Knowledge For Policy* (1991). They reject the idea that social science research lacks impact and blames unrealistic expectations of research on -

> ... misunderstandings about the nature of social research and the ways in which its knowledge can affect social institutions like education. In brief a good deal of mischief has been created by a 'simple' model for research impact which has it that social research can generates facts ... and that such facts enable users to make unfettered judgements which will improve social life. (p.6).
>
> [This model] implies a naive view of the research process and it ignores the various forms of knowledge that social research can generate. It also assumes that social research knowledge is always made available to users and that those users inevitably employ that knowledge in ways that improve the social scene. And it assumes that the field of application is politically sterile ... (p.7).

It is comforting to have this authoritative assurance that research has a simple policy impact. However, this framing of the problem is dependent on a particular view of an independent social science. Part of the argument traverses the familiar terrain of the differences among research paradigms. Research cannot have a simple impact because there are different kinds of research which 'generate different types of knowledge' which have different uses. The work of Weiss is cited to suggest that there are several ways in which research knowledge is taken up to influence policy. Much of the Anderson and Biddle book is a collection of examples of research impact that purports to demonstrate the complexities of research impact.

What this argument does not do is challenge the basic proposition of the intellectual authority of the social researcher. There is little critique of the crisis of social science that other writers have found to throw doubt on the whole 'foundational epistemology' on which such a confident treatment of research and policy rests. These critiques expose the 'neglected epistemological assumptions' which underpin their own knowledge-production activities (Usher 1996).

Anderson and Biddle's account does not recognise that the policy intervention of the state in education reform has reshaped the kind of comfortable independent positioning of the researcher that they assume, though paradoxically, numerous readings they cite bring forward this kind of evidence. These interventions are the untheorised heart of the matter, so that the book reads like an apologia for educational research, which does not acknowledge how educational research itself has responded to the shock of state interventionism with attempts to understand research and policy processes (eg Halpin and Troyna 1994).

Dale (in Halpin and Troyna 1994), in reflecting on the English situation, is critical of the kind of research responses that state interventionism is producing in educational researchers. He argues that educational theorists have remained trapped in a 'disciplinary parochialism' that refuses those theoretical resources which lie outside the sociology of education. The result is 'applied education politics' which has more to say about education than it has to say about policy (Dale 1994:31-33). Thus it is possible for research on policy to explore the 'working out' of education policies in the system at the level of institution and generate descriptive accounts of particular policies and their consequences, for example, of the Education Reform Act in England. The challenge for theorists of education policy is to employ critical social theories that lie outside the field and develop a 'politics of education' that go beyond this, particularly to explain why education and training should be a domain for policy intervention.

Policy is a researchable domain where these questions can be explored empirically and theoretically, as Halpin and Troyna's collection of essays shows. VET researchers need to take up the challenge of critically analysing their engagements with state-sponsored research and examine bigger questions about the contemporary state and its interventions in education. There is a need to ask, as a recent national conference did, what drumbeat VET researchers are marching to in the political economy of VET policy (Ferrier and Anderson, 1998).

This exploration should focus on the way research practice in VET is constructed as part of the interplay of contexts that I have suggested. It should set aside the instrumentalist assumptions of the culture and attempt to see how policy processes are constructing research. There are key issues surrounding the authority of the researcher and how this is validated by the authority structures of the state and the participation in a 'profession' of VET researchers.

Conclusion

It is a poor misrepresentation of real-world research and policy relationships to make out that main agenda for the new VET research association is ensuring that research has influence, without also acknowledging how the VET policy context has driven research and how education and training reform has reconfigured research and policy relationships. We should not be dissuaded by the policy instrumentalism that permeates VET research culture from theorising and researching the changes in the way research and policy relationships are constructed in the contemporary state.

Whether VET research can yet recognise its policy instrumentalism and begin to critique and debate the conditions of its own research production is an interesting question. No doubt the 'success' of VET research in influencing policy and practice deserves some self-congratulation but this will not help to develop a critical perspective on the field, its position in the education-and-training spectrum and its relationship to contemporary developments in education and social policy.

At stake are the longer term interests of the development of VET scholarship. The pressures for vocational research centres to 'perform' have consequences for the range and depth of VET research that need to be examined as a part of the work of developing the field. It will be a victory of pure instrumentalism if VET research culture does not become a more socially critical one which inquires into the conditions of its own research production.

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The convergence of vocational and adult education in learning communities

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The paper locates the discussion in the 'big picture': The whole context of which vocational learning is just one part. Then there is a description of how the Australian myth of 'the bush' - the great outback - is juxtaposed with the historical context of the industrial revolution's formation of the apprenticeship system and trade training. The resulting version of VET - gendered, classed and urban-specific - is then contrasted with data reported from empirical studies currently examining (among other things) the nature of vocations and work at a community level and the manner in which they are created there. Based around the two implicit questions: Whose industry? Whose vocations? - implications and questions are finally raised for practice about the nature and meaning of an 'industry-driven' VET system.

Background

A word of caution on the terms used in the paper is in order here. In general, meanings for the terms 'adult education' and 'adult and community education' are reasonably standard across Western countries. However, the meanings of the term 'Vocational Education and Training (VET)' vary from country to country. The meanings for VET used in this paper are common in counties such as the USA, UK and Australia, but there will be variations. The paper has attempted to be clear as to the particular context-of-meaning as it arises. Similarly, the term 'rural' and 'regional' are often used synonymously in Australia, while in the USA, 'regional' is not used in this context, but 'rural' is. There is also a problem with the roles of education and training providers and research agendas in different countries. In the USA, many Community Colleges provide pre-employment vocationally-oriented training of a more generic nature (depending on the State) than, say, the Institutes of Technical and Further Education (T.A.F.E.) in Australia, though the situation in both countries is one where national policy is driving (in the case of the US, 'promoting' would be a more appropriate term due to the State-rights issue) an industry-driven ethos for VET In the UK, the situation is more closely akin to Australia. There are bound to be other differences which remain undetected, for which I apologise.

In a world increasingly governed by global rather than local markets, it is, however, crucial to open our debates so we gain some objectivity about our particular roles in the big picture.

Australia, like many Western countries, is undergoing a restructuring of rural industries brought on in part by international competition. The resulting population shift to the seaboard cities and the impact on rural sustainability is ongoing. In times such as these, the question has to be asked: How can Vocational Education and Training (VET) (note capitals) and vocational education and training (or vocational learning) contribute to sustaining rural areas such as those in Australia? I intend to explore the concept of learning as a mechanism for addressing the contribution of vocational education and training. The discussion is set in the overall framework of social ecology (e.g., Bookchin 1990, Welton 1993), and of indicators of social capital (e.g., Coleman 1988, Putnam 1993, Teachman, Paasch & Carver 1997) as the 'products' or 'outcomes' of a sound social ecology. Community learning is posed as the principle means of building social capital and contributing to the sustainability of human and physical systems in rural and regional areas.

Perceptions of a sustainable society can be constructed from a number of viewpoints, with the tendency that each perspective seeks to illustrate or prove the 'rightness' of its accounts. Disciplines, by and large, tend to have developed specialisations of focus (Boden 1994, p5) which serve to analyse the parts of the whole integrated human/physical system. No single discipline of study would ultimately claim that it has 'all the answers'. Each single discipline would see its focus as contributing to a whole and integrated set of concerns wherein humanity, living and non-living things reside in dimensions of time and mutual dependency.

The important point to be made here is that all theories about reality are human constructs, and are based on variously diverse sections (focuses) of human concern. They are nevertheless only a part of the whole picture of humanity's integration with its wider living and physical environment. That is, human activity is and can only be understood in relation to the whole context in which is occurs.

Human systems are a product of interaction with the physical and social environment of which they are a part. This 'social ecology' (e.g., Bookchin 1990, Welton 1993) has features which emerge and can be identified and described over differing periods of time. Human systems are integrated with other aspects of existence: there is the human sense of place, sometimes referred to as the human relationship with built and natural environments (people's sense of their own locality and their relationships with it). There are demographic patterns describable about patterns of people's habitation and features in particular geographic areas; economics represents a particular study of a group of human relationships with objects in commerce and trade; sociology and psychology are concerned with understanding people and the ways they interact with each other in their societies; generic strands of concern (youth, health, employment, euthanasia) straddle units of chronology: for example, over what period of time is it sustainable for the 'cream of a community's youth' to be (a) killed in wars, (b) unemployed, or (c) re-located elsewhere because few employment or educational opportunities exist in that community?

Here I am using the idea of social ecology to describe a network of interdependent human and non-human features that interact together over time in processes (which have definable features) towards definable outcomes (which may have different features depending on the period in question). In this paper, my concern is to open up the discussion using key ideas such as integrated or embedded activity, sustainability through diversity, social capital and social ecology in an attempt to throw light on debates arising presently about (but not limited to) the nature and future of regional and rural sustainability.

In brief, the paper proposes that we need to be reminded that particular sections of social activity, such as vocational education and training, are and should only be discussed in the context of the whole of society in order to evaluate their roles. We need to ask not only how does this section fit the whole, but how should it fit the whole? I make these words of caution explicit in days when the term 'industry' is used in the Vocational Education and Training (capitalisation denotes the activity covered by national policy and funding provisions) sector to (a) selectively include mainly 'large enterprises and corporations' and (b) by definition therefore to exclude areas of activity which are genuinely vocational education and training, yet which are not denoted as an 'industry'.

At the core of the points I will make are concerns that the identification of economic, social or any other 'problems' for 'treatment' (think of the example of vocational education and training as a solution for 'skilling up' an unemployed workforce) which does not take into account the interdependent context from which the problems and treatment come (and are to be returned to) is doomed to failure.

It is important to recall that the majority of businesses in rural and regional (and the rest of) Australia are small (including micro and home) businesses, embedded as they are in their interdependent communities, and that this group of small businesses remains the most difficult to service in terms of general government policies and practices, and in the area of vocational education and training specifically. Moreover, it should be remembered that as time goes on the proportion of small business will grow, not shrink. The changing nature of work, along with the changing employment rates and patterns means that the preponderance of micro business and home business will increase as a proportion of the whole of small business. As Walzer (1996) says of the comparable situation in rural America:

Communities in rural areas have an opportunity for significant revitalisation as businesses and residents seek a better quality of life or business climate. New telecommunications and technology applications offer ways to conduct business in a cost-effective manner from long distances....Many of the jobs created in the next decade will be in small firms that can function well in rural areas. (p.17)

It is significant for the discussion in this paper that small business, more than any other kind, is embedded in regional communities, commonly in a mutually beneficial relationship of commerce and trust. Regarding the term 'trust', I do not take its meaning at face value, but accept the need to use it in a general sense until its more generic meanings are defined in specific contexts of use.

The issue related to the meaning of vocational education and training in regional Australia as being at the core of factors affecting the future of vocational education and training for rural (in Australia at present, the terms 'rural' and 'regional' tend to be used synonymously) areas. The implications of the meanings of vocational education and training are discussed in reference to the concept of social capital formation, and a rationale for using collaborative, community learning as the means (process) of building community capacity to apply its stores of social capital follows. Community well-being and a sustainable regional community can, it is argued, be enhanced through the process of recognising and developing a revitalised 'vocational education and training' at the regional level.

What is vocational education and training in rural Australia?

Notions of 'rural' and 'urban' conjure up differing images of 'work' which reflect the binary nature of the terms. 'Rural' is commonly (though mistakenly) used as a synonym for agriculture or farming, with rustic, relaxed and pastoral backdrops. 'Urban' carries images of bustling people, frequenting industrial landscapes, working in big factories or tall buildings. The immigrant landed gentry presided over the country's ride 'on the sheep's back'. Notions of apprenticeship and training were foreign to the farming and agriculture sector, where after all, jobs and property were inherited and owned by the 'worker'.

On the other hand, the industrial revolution, automation, factories, unionism and awards related to specific occupational details, organisational development, human resource management theory and practices, and a host of other concept systems originated from the idea of densely populated and tightly structured workplaces. Ownership was with the management not the worker. Apprenticeships were for the industrial landscape, not the rural one. Our present understanding of the boundaries of the Vocational Education and Training agenda are reinforced by Australia's use until present times of 'declared vocations' (e.g. DIRVET 1996, p9) which were once based on a classed (the working class compared with the landed gentry), gendered (workmen, jobs for the boys, traditional male trades such as metals, building) and White Australia. Government expenditure on apprenticeship and traineeship training depend on which vocations or trades are 'recognised' from time to time. Given this tradition, it is hardly surprising that vocational education and training is associated with urban areas.

Neither is it surprising that rural and regional Australia should be distanced in more ways than one by our society's construction of the rural/urban divide, which is often perceived to be encouraged by the media. Papers such as this one seeking to explain the whys and hows of the power behind binary terms, are nevertheless at the risk of reproducing or reinforcing the over-simplification of the very binary they discuss. For example, the term 'urban' is often used as a synonym for 'capital city', yet there are many large and industrial urban centres with matching 'big city' vocational education and training agendas which are located in regional Australia. Yet explanations of binaries are crucial if those affected adversely by their construction are to be able to understand then control their effects.

Media and the myth of the bush

In a newspaper piece, Donald Horne (1996) made the point that: 'Making sense of a region is an enormously important public construction project: the 'identity'-making of individual regions is weak in Australia'. (Horne, 1996, p5.)

The piece goes on to describe models of 'good' tourist drawcards, while decrying the fatuous promotions of the big-banana/-pineapple/-prawn/-etc syndrome. Local communities have a responsibility for the reconstruction of historical or other tourist venues, but so too does the media. In the same way as the media has been shown to reproduce and in fact construct racism (Falk 1994), there is a reported sense in the rural community that the media is often responsible for the creation and reproduction of myths about rural people and ways of life.

Cherished and embellished myths, legends and memories about mateship, self-sufficiency, rugged individualism, bravery and attitudes to authority all inform media reflections of the Great Australian national character. As Rothwell (1997) puts it:

> City Australians have their own imagined Bush - full of stolid, Akubra-wearing graziers, of munching flocks and twirling windmills; a landscape bisected by red roads and roofed by brilliant skies. For generations we've taken that Bush for granted. The inland has been our image of the true, self-reliant Australia, even as we became uncomfortably aware things out there beyond the mountains were changing. (Review, p 1)

The media is perhaps the most difficult force to influence, since it is a common argument of newspaper editors that they are simply reflecting popular views and themes, not constructing them. The problem, of course, is that it is a combination of factors: not always, but sometimes - but influentially - newspapers embellish views and news with a slant which makes the piece 'interesting' or 'readable', and it does this by recourse to popular cultural myths. It is interesting that the Rothwell article is titled 'Cry from the Bush' which in itself recreates inadvertently the binary of bush/city divide, using 'bush' not 'rural folk' or 'regional Australia' and so on. The word 'bush' itself is emblematic of national myths. The irony, of course, is that the word itself means a small tree, or a forest of them, while the Great Australian Bush is often a shrubless desert.

VET for who?

While this paper ends by supporting collaborative, community learning as being a significant mechanism for promoting and attaining regional and community sustainability, the ideas will need the support of empirical and multi-disciplinary research. The proposition to be tested in such subsequent research is whether the principles and practice of a 'learning society' (e.g. Young 1995), a 'learning organisation' (eg. Senge 1990, Watkins & Marsick 1996) and a 'learning community' (e.g. Brooks & Moore 1996, Falk 1997a, Lessem 1993) can be usefully applied as alternatives and supplements to existing economic-derived indicators of community well-being such as unemployment.

In a very real sense, thinking of rural areas along the single industry dimension of, say, agriculture, or forestry, or mining, casts rural areas as having a sole raison d'etre of serving urban areas. It is at least reasonable to propose a mutual dependency. The national and stated purpose of vocational education and training is to serve industry. In rural Australia, the real industry is the activity of local communities with their embedded small businesses, yet there is no present policy which allows Vocational Education and Training (VET) (note that the use of capitalisation serves to remind us that the term refers to the field of concern touched by government policy and funding measures) to service ('supply') the 'demand' for vocational education and training (note the lack of capitalisation, which denotes how this sphere of activity, though truly vocational, is not recognised or touched by government policy or funding) which arises through the activities of communities of people busy actively and critically creating their own sustainable futures and hence vocations. Moreover, such thinking serves to reproduce the economic/social divide which underlies the problems associated with regional sustainability.

The second problem of thinking of regional and rural areas along 'single industry' lines is in relation to the embedded (perhaps 'contextualised' is another word for this notion, yet it is very general and rather overdone) nature of the problem. By 'embedded' I refer to the symbiotic relationship of, say, small business to their home communities; of the interdependent relationships between withdrawal of government services from towns (schools, hospitals, police, social welfare) and the 're-profiling' of private services (banks, shops) resulting in the reduction of population of small towns to below sustainable levels.

The question of embeddedness - of the absolutely context-dependent nature of any question of sustainability - raises questions about the unidimensionality of proposed solutions for the problem (e.g., 'VET' with capitals) solely along 'industry' lines.

Given the above difficulty in either generalising about the nature of vocational education and training across the nation, or of being able to be confident that it means what it says it means in terms of 'serving industry' (whose industry?), the discussion which follows relates these ideas to some specific related issues.

Background to the 'Rivertown' community

On the assumption that a learning community (one that is aware of and shares its resources, skills and knowledge) has the potential to be sustainable (to maintain itself as it wants to be), this paper reports on a pilot study being conducted in a rural community. In the study under-way at the moment, we are examining all aspects of learning within the particular social context of the community in and around a rural township in Australia. Rivertown township is typical of many in modern day rural Australia: it is small - its population is approximately 5,000 - it has high unemployment, particularly high youth unemployment, it is suffering resource shrinkage as banks and government outlets close regional facilities, it has had its share of trouble in obtaining medical practitioners and allied health services from time to time, and it has had until recently a long history of divisive and bitter community conflict arising from the differences between the 'hippies' and the 'rednecks'.

On the positive side, Rivertown differs dramatically from other communities with similar characteristics. The township, as the focus of the surrounding community, is set in a picturesque river valley, and is described as an historical village. The township itself is attractive. It is clear that the town is cared for in the physical sense. There are many community activities and events, some of which attract national attention and patronage, and the local clubs and associations meet frequently and actively. Somehow the community is vibrant - art and craft have become a community impetus. It is also recent winner of a prestigious national community award, various tourism and numerous Tidy Town awards.

Community members describe their community's success as resulting from 'pride' (Editor 1997: 8), 'spirit', 'teamwork', 'working together', 'friendly', 'support for each other', 'everybody pulls together', 'co-operation between everyone', 'all walks of life working together', 'people band together...on a project', 'grassroots community action' (Voss 1997, p7), and:

> What has been our strength is we've brought different lifestyles, different ideas and different views together and moulded them into this community outlook. (Voss 1997, p7)

It can be said that Rivertown certainly has been engaged in constant learning. It has learned that there are benefits from working together for common purposes, and it certainly has demonstrated that it has learned to share certain values in order to achieve common purposes. Also, the various factions and groups whose values originally did not coincide have presumably maintained their individual (or separate group) values, and learned some new values about the benefits of sharing goals while retaining diversity.

In the larger study, we are looking at the learning which is present in the community described above. We are looking at learning processes and learning outcomes. We are looking at the individuals learning and the results of that learning. We are looking at the way those individuals form groups, clubs and associations (and join existing ones) and how they learn as groups. We are looking also at the way the various groups, clubs and associations work together (the Bowls Club with the Netball Club with the Rotary Club with the Hospital Auxiliary with the craft club with the church group). In short, we are looking at what constitutes a 'learning community'.

What is reported in this paper is, however, a small snippet of the larger study whici used a a methodology described more fully elsewhere (Harrison & Falk 1997). The larger project located a demographic representation within the geographic community, gained its sample through a snowball technique (eg. Rubin and Babbie 1993) overlaid with socio-demographic variables

Emery and Purser (1996) and collected data from self-recorded conversations, interviews and self-maintained reflective journals. The data collectred over this period included tape recorded interviews (n=30, 60- 90 minutes), personal individual tapes (n=16 10 - 45 minutes), personal diaries (n=28 10 - 30 A5 pages) and tape recorded meetings (n= 6 60 minutes).

The method employed in this preliminary analysis of the data is an empirical analysis of the productive communicative interactivity between local community collectives (groups, associations, networks, informal alliances), described more fully in the section which follows. The data set consisted of the transcribed interactions between local participants collected over the 4 - 6 week time span.

Framework for analysing this data

For the sake of this paper, I use the following framework of community learning indicators developed by Brooks and Moore (1997), titled 'Characteristics of existing learning communities'. It is noted that segments of the analysis which follows are also used in Harrison and Falk (1997) for a different purpose and context:

- Have a forum for sharing ideas and visions
- Discuss issues and problems using newsletters, newspaper articles, elected official meetings, and informal networks
- Use teams for working on small and large projects or events
- Encourage community at large to assist with any/all projects
- Recognize volunteer participation and teams appointed to do specific work
- Make results visible to community members via displays, photos, and exhibits
- Upon completion...tell the story of the struggle and results...celebrate with others in public venues
- Pass the torch (other projects, events, activities) on to other groups in the community
- Promote volunteers, project teams, leaders and others to new and varied positions of responsibility...keep them active...don't wear them out
- Give everyone some help if they need it...focus community and team efforts on critical tasks or projects...get them done in a short period of time and celebrate going on to the next
- Look for quick victories (accomplishments) on projects or events or activities within the community...break large projects into 'do-able' tasks

Readers should bear in mind that the set of interactions to be discussed here constitutes one short period of time in one social network. It would be highly unusual to find examples of all indicators in one passage. So as to avoid giving the wrong impression, if the data collected from other sources is available and confirms a particular point, that also will be noted.

How the Craft Club interaction rates against the indicators

This section is set out under the eleven headings of learning community indicators. Under each heading, examples of compliance or otherwise with these indicators is noted by quoting snippets from the interactions.

The scenario at the Craft Club of mixed males, females and age groups. The 543 turns take place over about half an hour. The main participant here is moving around the group, talking to different members who have come along for their weekly Craft Club gathering. There are 24 in attendance on this day and each are participating in five different craft activities.

1 Have forum for sharing ideas and visions

The Craft Club is one such forum, though it is important to note that the forum is no guarantee in itself of sharing ideas and visions will occur, yet they do:

244 Look what I've made.

245 Canvas embroidery...

246 Oh, they're nice. There is a section for these at the Show.

247 I've already told them...that they have got to exhibit them in the Show.

2 Discuss issues and problems using newsletters, newspaper articles, elected official meetings, and informal networks

There are a several instances where elected official meetings and informal networks are referred to. Here is one of those:

35 And...um...are you still involved in [the] hospital auxiliary?

36 Yes

37 How long have you been in that?

38 Oh, nearly 30 years.

....

41 And you've been treasurer for a long time?

42 Yes.

A gathering of this kind is unlikely to show printed media indicators, but the local newspapers provide a strong record of uses of the printed media in discussing issues and formulating ideas.

3 Use teams for working on small and large projects or events

This community has a number of annual events. There is the local agricultural Show and a large annual Craft Festival. The most recent successful whole-community activity was the production of a huge tapestry, some 16 metres by 4 metres. The Silks project, as it might be called, involved a large proportion of the community working in formal groups and informal networks to achieve the goal.

These events seem to foster a number of networks engaged in learning relevant skills or working towards entering displays in the events, as mentioned already in (1) above. The networks consist of group (teams) of loosely linked individuals who work together for a common purpose or interest. This snippet reflects on the change in the Country Women's Association (CWA) over the year, and how other groups have arisen to take some of its roles, then moves to describe the activities of different groups ('lots'):

145 And how many is in the Hospital Auxiliary now?

146 We've got 14 active members.

147 It's just the same as everything else you know these days, and new groups start up.

148 Yes.

149 And they (old groups such as the CWA) lose a lot; the CWA would have catered for all these groups once, like learning things, but now with the Hidden Talents it's coming that way, isn't it?

153 There is a large lot here, so what are they all doing now?

154 Oh well, this lot are doing their hitch patchwork quilts and the next lot are doing ribbon embroidery.

155 Oh yes.

156 And this one is doing hexagonal patchwork...

4 Encourage community at large to assist with any/all projects

While no indications are apparent in the present data, there is plenty of evidence to show that wider community projects, such as the Silks Project, involved a broad cross-section of the community.

5 Recognize volunteer participation and teams appointed to do specific work

There is frequent reference to volunteer and team appointments for specific projects made both in the past and in the present. Some volunteer associations noted in the transcript are Apex (women), Hospital Auxiliary, CWA, the football club, and the Parents and Friends committee of the local school.

6 Make results visible to community members via displays, photos, and exhibits

In addition to the example in (1) above, and the Silks Project mentioned under (3), there is this:

279 I'm not coming next time because I'm getting ready for the Craft Fair

...and this:

288 Because someone told me you went to Sydney...

289 Yes, I went to the Premier Bear Affair which is held every year in Sydney and they had a huge competition there...

7 Upon completion...tell the story of the struggle and results...celebrate with others in public venues

Continuing on from turn 289 above is the report on the celebration of the achievement, an example of this indicator:

289 Yes, I went to the Premier Bear Affair which is held every year in Sydney and they had a huge competition there, which I must add that [people from our State] did exceptionally well in....they did exceptionally well, so you know it's been really good for the [people from our State].

8 Pass the torch (other projects, events, activities) on to other groups in the community

There is a group of young people busy at the meeting, illustrating the 'passing the torch' characteristic. Adults accompanying the group of young people engaged in the activities observe this:

350 It's marvellous what they learn, isn't it?

351 Yes.

352 They do exceptionally well, they are very, very keen.

353 Yes, well that's what it would be though...

354 And that gives me a big thrill, because they are so keen.

9 Promote volunteers, project teams, leaders and others to new and varied positions of responsibility...keep them active...don't wear them out

The participant checking her diary in the snippet below is a busy community volunteer (refer also to previous examples of the Hospital Auxiliary - there are numerous other examples). The diary entry occurs amidst a busy social interchange:

202 Are you going to be able to come next Tuesday?

203 Look, it's in my diary.

204 Oh wonderful - to show us the things -

205 What time will we say next Tuesday then?

206 Oh, any time. Half past one, or whatever time.

207 One o'clock would suit me.

208 Yes, you get a bit longer then to see how we work it all out.

209 Yes. And the longest pieces are 21 centimetres....

10 Give everyone some help if they need it...focus community and team efforts on critical tasks or projects...get them done in a short period of time and celebrate going on to the next

The best example from the present data on this point is the participant who is wandering around the groups and individuals working at the meeting. She asks different people and groups what they are doing and how they will use their work. Some instances are quoted above.

One extract in particular shows how the group constructs the learning environment and ethos of the actual event (the Craft Festival) for the less experienced (or simply those who don't know how to do a particular operation, as in this case):

272 I've got a nose [of a stuffed teddy bear] up there - I was nearly going to bring it down this morning - because I'm no good at the nose.

273 That's cheating! You could do it. I'll teach you how to do it.

274 Yes, that's it, you've got to show them how to do it.

275 Yes, well that's the only way to learn, isn't it.

276 Yes. You've got to do it yourself.

277 You've got to do it yourself.

So it is not allowable to have someone else do work on your job - you have to do it yourself.

11 Look for quick victories (accomplishments) on projects or events or activities within the community...break large projects into 'doable' tasks

The annual craft fairs and the agricultural shows apparently provide this outlet, and the Silks project illustrates a longer term, more permanent outlet for the accumulating skills and knowledge.

Discussion

It would be a mistake to think that the examples quoted here are the limits of conversational interactions exhibited by this groupThere are references to links with events and people outside the community, to national activities, a longish section critiquing the government of the day's Goods and Services Tax (GST) proposals, stock prices and conditions, discussion of social issues including single parenting, reminiscences about times, events and people of the past (usually in the context of club and association roles in community activities - for example fund-raising events held in the past to pay off the Church Hall). There are several references to the need for, and processes involved in learning, and there are some interesting comments tc be interpreted about gender roles.

The interactions reported here occur in the context of what is sometimes viewed as a 'trivial' social gathering. The work carried out by this 'trivial' gathering is momentous, however, and one reason for the selection of the Craft Club has been to contrast the view of sewing, gossip and women as a gendered and stereotypical one (there are men and children of all ages there) with the real work done for the community here.

The Craft Club has demonstrated its 'civic capacity' as well as its 'vocation-building capacity' by assembling individual skills, knowledge and values within its group framework to produce effective connections of a more 'economic' dimension. The economic dimension is reflected in the revenue raised through the sale and display of artefacts at the craft fair, local horticultural show and tourism shops. The artefacts act as a drawcard to those attending the cultural events and the tourist venues. Most of the rewards are injected back into the local environment through recognition of the individual players, and sponsorship of community projects. In doing so the 'stewardship' of natural resources and the cultural way of life is sustaining the community. It appears that the nature of the learning is one of mutual benefit. It could be said that through the group's behaviour and practices (capacity building) the community has benefited not only through individual stimulation, interest and social means of verifying identity, but also through outcomes for the betterment or sustainability of the community.

What, then, are the implications for practice (whose practice?) in this convergence of community-based industry and vocational generation?

Implications for practice

Underlying the notions of capacity and vocation building, social capital, and sustainability underpinning community learning are significant and multiple implications for practice. It is not for me to attempt to identify the issues for practice valued by those working in USA Community Colleges, as these will vary from those working in contexts in other countries.

Let me approach the matter of implications for practice from the perspective of grouping issues and questions. What are the main issues and questions that I see for those concerned with education and training in what precedes? I see these as coming under three headings: (a) the convergence of adult and community education with vocational education and training, (b) the role of local networks in the provision of vocational pathways and (c) the nature of 'industry' and the consequences of holding particular meanings - including for small business.

(a) The convergence of adult and community education with VET

Many Western countries have a tradition wherein different sectors involved with the education and training of people in post-compulsory settings deal with different aspects. There are many of these, and they sometimes overlap in wordings and meanings: adult education, vocational education and training, adult and vocational education, adult and community education, adult literacy teaching, migrant English. Each of these (and many other fields of adult educational practice) has their own way of doing things - teaching methodology, educational culture, history, class size and location, professional development provisions, pre-service training, level of trade unionisation, physical location, buildings, staffing structures and so on.

As never before in the last century, the barriers between these sectors are being merged and broken down by forces for change such as global and instant electronic technological forces which are simply irresistible. The consequences of this change for the way we carry out our practice affect all aspects of our work. Of particular significance is the bringing-together of the two largest sectors, known by different names but commonly Adult and Community Education (ACE) and Vocational Education and Training (VET).

The data reported in this paper illustrates some justification for this movement, with the generation of vocation at the community level seamlessly merging into job-creation and the start of small businesses. The fact that, in Australia at least, small business use ACE providers for their training above the Institutes of Technical and Further Education (TAFE) shows how important it is to come to grips with the ACE/VET convergence.

(b) The role of local networks in the provision of vocational pathways

One clearly demonstrable function of groups such as the Craft Club is to create, foster, teach its members and support their attempts, in the application of their skills and knowledge in community displays, exhibitions, events, festivals and fairs. the data show how there is a seamless web of progression in the notion of 'vocations'. The links between these activities and gainful employment in small and other business can be seen in the data, and the role of the community in creating and fostering vocations of the future.

The role of communities as the engine-rooms of regional vocational creation is little understood in a country whose vocations are defined according to particular (and commonly large) industry groupings (e.g., 'Metals', 'Forestry'). Considering the majority of those in rural areas are employed by small business, a trend which has been noted will increase rather than decrease, and considering the fact that the majority of business in rural localities is small business, there is a demonstrated need to find out more about the community generation of the nature and number of vocational opportunities.

(c) The nature of industry and the consequences of holding particular meanings - including for small business.

The implications of the preceding for the nature of industry in regards to the vocational education and training national policies and agenda are significant. One aspect is the definitional consequences of the industry itself. The other is the problem of small business, which remains largely ignored in education and training policy and structures.

Big industries such as mining create many jobs and help in the general infrastructure development of rural Australia. However, they also create a reliance on an increasingly unreliable form of regional development. In the USA in the 1970s, mining-dependent areas grew much faster than other nonmetropolitan districts, a pattern which was reversed in the 80s (Walzer 1996). This 'boom-bust' tendency leaves the dependent local communities in disarray, and without the capacity to be resilient. Similarly, Australia's uni-dimensional dependence on wool and sheep earlier this century produced an unsustainable regional and community support structure based on economic precepts alone. The hegemony of economic measures combined with a uni-dimensional industry view has left rural Australia economically weak and with extremely low reserves of social capital.

It seems that the major challenge for vocational education and training policy and practice is to enhance the collective and individual experiences already embedded in regional communities (that is, to value-add prior learning). The sustainability of these vocational education and training outcomes in regional Australia will depend on identifying, promoting and building on locally recognised community 'vocations' which are the building blocks of sustainable regions.

Until now, however, definitions of the term 'vocation' have been owned by the VET sector. In understanding the gendered and classed origins of 'vocation' at the community level, we can now see what is possibly the most significant implication for all areas of adult education and learning - how the term 'industry' should be defined. The national and stated purpose of vocational education and training in Australia is to serve industry. In rural Australia, the real 'industry' is the activity of local communities as they build and re-build their reservoirs of social capital through group learning processes. Saul (1997) has this to say of the role of economics in western society:

> [O]ver...25 years, economics has been spectacularly unsuccessful in its attempts to apply its models and theories to the reality of our civilisation. It's not that the economists' advice hasn't been taken. It has, in great detail, with great reverence. And in general, it has failed. (Saul 1997, p4)

In combination with the argument Saul makes regarding modern society's exclusion of concern for the public good which is in turn reflected in much of today's policy agenda (including that relating to vocational education and training), Putnam's (1993) work on social capital converges with other recent work on community development and community learning (e.g., Cox 1997, Narayan & Pritchett 1996, Falk 1997b) to provide a firm basis of an argument for harnessing the strengths of diversity in pursuit of regional coherence and sustainability. In other words, to achieve change and development as well as realistic and sustainable outcomes, the development of skills, knowledge and values needs to be dealt with in the embedded context (economics, yes, but not only economics) in which those features are both acquired and will be applied.

Under the present economics-driven policy and funding structures there are few mechanisms for recognising and valuing the benefits of rural diversity. This lack of recognition prevents assistance being provided to adult education and VET in delivering educational services to these active and learning communities of people busy at the task of creating their own sustainable futures and social capital, and hence sustainable vocations. The key research and practice implied here is to establish and measure the learning indicators which value-add the embedded community industry capacity, then develop that capacity through community learning processes.

Note: I gratefully acknowledge the contribution of my colleague Lesley Harrison in her assistance with the preparation of the methodology and discussion sections of this paper.

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A failure in imagination: Towards a critical review of VET sector orthodoxy

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> You wouldn't believe it but up here you'll find hundreds of training packages from every loony toon around the world. (A colleague writing from a refugee camp in Thailand, 1998)

After ten years of structuring (and restructuring) of vocational education and training in Australia, it is becoming increasingly difficult to raise fundamental questions about the Vocational Education and Training (VET)sector which has become an industry in its own right with its own institutions, beliefs, culture, language and practices. It speaks of its own 'best practice' and celebrates national excellence in functions such as the Australian Training Awards. After five years research in VET, workbased learning and organisational change, the *Workplace Learning and Organisational Development (WLOD) Unit* at the University of Western Sydney, Nepean has collected sufficient data from a number of funded and unfunded research projects to continue to believe that there remain many questions about the future direction and relevance of current VET sector orthodoxy (that is, national standards, AQF, Training Packages, accreditation processes and so on).

VET orthodoxy appears to have claimed 'a professional, political, and financial monopoly over the social imagination, setting standards of what is valuable and what is feasible' (Illich, 1970, p.3) and thereby limiting what is possible in vocational education and training to a narrow perspective of 'training'. When the conceptual foundations for the VET sector were laid complex social factors such as the relationship between enterprise development, regional development and social cohesion (Childs 1997, Wagner and Childs 1997, Wagner and Traucki 1985) and the nature and direction of post industrial society (see for example James, Veit and Wright 1997, James et al 1994 and Rifkin 1996) struggled to find a voice. Since then, despite the best efforts of some imaginative research and practice, national institutionalised developments have been based on the question 'how to make *this* system better', rarely considering the question 'is this the right system?' nor 'what else is possible ?', despite evidence from researchers for the need to do so. For example, current national approaches to VET do not work for 80% of enterprises in Australia- that is, the small business sector. (Childs 1997)

Background to the WLOD unit

A quick glance through VET sector materials reveals the repeated use of words like 'training', 'delivery', 'client' and 'workplace training' with a strong commitment to curriculum and training packages. Our research indicates that the term 'workplace learning' has a variety of meanings depending on context, purpose and epistemological influences. Within the VET sector in Australia, it is often used synonymously with 'training' and training is synonymous with 'curriculum'.

We have broadened the definition of *'workplace* learning' to understand *workbased learning* as 'a complex arrangement of:

- formal, informal and incidental learning activities both inside and outside the workplace
- individual, collective and organisational learning
- recognition of prior and current learning
- accredited and managed workbased learning
- partnerships in learning, research and development.

We understand 'work' as a place of paid employment, unpaid work, voluntary activity, non-income generating artistic production and so forth. We define 'organisational development' as the collaborative process of analysing, designing and implementing desired changes in the complex arrangement of structural, procedural, social, economic, political and material components of an organisation and its purpose. Using these definitions an 'ideal' concept of education and training has emerged in our research and education practice which we have called 'complex learning environments'.

Complex learning environments are those environments that

- deliver social, technical, conceptual and critical competence,
- produce complex learning outcomes that reflect social diversity (age, gender, ethnicity), skills diversity (manual, technical, cognitive, social), diversity of actions and interests (economic, social, political, cultural) , diversity of networks (interpersonal, local, regional, national) and diversity of resources (personal, financial, structural),
- are related to the social basis of the learning. Individual learning processes produce less complexity than social learning processes, and
- reflect the relationship between enterprises, organisations and the communities in which they are located and/or to which they are connected.

We use this concept as an analytic guide in our research. In the following section we bring together key findings of our research from across a wide range of projects and give examples to illustrate them from specific projects. The key findings of the research indicate that:

1. the VET sector has difficulty recognising social, political and organisational knowledge or knowledge that lies outside orthodox viewpoints,
2. the complexity of workbased learning and its organisational, political and social context cannot be reflected in 'training',
3. VET conceptual development is based on an approach limited to individual competence which conflicts with the concept of the learning organisation, collaboration and workbased teams,
4. VET conceptual development is based on an assumption that training is a key element in enterprise development. This conflicts with research data available for small and medium enterprises,
5. VET providers tend to equate their organisational interests (for example, their training product) with the needs of the client,
6. the complexity of learning outcomes is related to the complexity of learning environments,
7. cost benefit analysis models used by the VET sector continue to fail to include such factors as regional economic well-being, social cohesion and the cost benefit to communities of enterprise development: all significant issues when analysing cost-benefits within a social model of economics.

Discussion of key findings from research projects.

1. The VET sector has difficulty recognising social, political and organisational knowledge or knowledge that lies outside orthodox viewpoints.

Vital organisational and political knowledge (for example, knowledge defined by a historic interaction between communities and governments) tend to be overlooked by VET processes that recognise knowledge as defined by discrete tasks, roles, skills and individual competence in relationship to particular functions. The Remote Area Management Project (RAMP), an initiative by the Northern Territory Local Government Association, aiming to enable Aboriginal Communities to manage within Local Government requirements, struggled with its relationship to VET because it could not find a VET provider willing to accredit an alternative community-base project.(RAMP, 1996)

Our research into the implementation of competency standards in two companies (Wagner et al. 1996) reports that competency based training (CBT), and the related competency standards implementation, underestimates the complexity of knowledge, skills and experience required by a functioning workplace at all levels. Whilst easily identifiable operational skills form the centre piece of most CB-training programs and more generic skills are captured by the concept of key competencies, the social, organisational and political skills of each member of the workforce go unrecognised unless they form part of a given job specification. Competency assessment does not measure experience and knowledge of organisational history, structures, politics and social networks. It does not measure skills associated with practical solidarity and work based skill sharing such as inducting new workers, nor the inside knowledge of locally developed, non-standardised work practices. As Wagner concludes,

> All of this experience, despite its 'auxiliary' nature to the actual job, contributes to the effective running of any work place. it is these social, structural and historical components of each workplace that are important if the organisation is to operate in a state of quasi-stationary equilibrium. (ibid,p.111)

2. The complexity of workbased learning and its organisational, political and social context cannot be reflected in training.

In our industry based projects, the existence of 'sub-terrainian' learning processes that familiarise each worker with the organisational folklore has been consistently reported. Skills and knowledge sharing *outside* formal training processes includes vital operational skills not reflected in standards, assessment or training programs. Locally known as 'short cuts' (Wagner et al., 1996,p.110) they either allow workers 'breathing spaces' AND they can be fundamental to meeting increased productivity demands.

In some instances organisational folklore represents important worker collateral and there may be tensions as workers struggle to keep their knowledge outside of formal training processes. Sharing knowledge across the organisational divide of operations and management can lead to a loss of control and- finally - loss of jobs. In other words, not only is it likely that the standards or curriculum designed by VET practitioners (even when working closely with industry) do not reflect work realities, this likelihood is compounded by the ambiguities and contradictions, politics and social processes, of individual workplaces into which they are imported.

In the case of small business, 'dilemmas exist for owner-managers and small business employees regarding what information and ideas they should share' (Childs 1997, p56) and it is likely that owner managers will be reluctant to share core business knowledge with employees or outsiders- including VET practitioners- as possession of this knowledge may be one of the factors that protects the business from competition.

3. VET conceptual development has been based on an approach limited to individual competence.

The development of VET orthodoxy has been based on the assumption that competencies are inherently and innately individual. This assumption leads to particular approaches to 'workplace learning' and 'training' that are at odds with the concept of the learning organisation, the social realities of workplaces, and the enterprise realities of micro and small to medium enterprises- all of which rely on intra- and inter- organisational social processes as either a fundamental strategy for enhancing profitability or as a survival strategy in the process of pooling competence(Wagner and Traucki 1985, Childs 1997, Wagner 1997)

In our research into accelerated work-based learning at Hawker de Havilland (Childs, Ockenden, Hornery 1997), a clear contradiction emerged between enterprise agreements and competency standards that rewarded individual employees whilst instituting workplace practices that made it impossible to achieve productivity targets as individuals. Employees work in self-managed teams and competencies are shared across those teams in complex ways, yet no mechanism is in place that recognises this workplace reality. This problem exists for workplaces that have refocussed their training resources towards high performance teams requiring high levels of interdependency and skill diversification.

4. VET conceptual development has been based on an assumption that 'training' is a key element in enterprise development.

Our research into workbased learning in micro and small to medium enterprises (M & SMEs) indicates broad agreement that many factors contribute to the success of medim and small enterprises and that 'training' has limited impact as a factor (Childs 1997).

5. VET providers tend to confuse their organisational interests (for example, their training product) with the needs of the client.

The institutionalisation of VET, as mentioned above, has brought with it the stagnating bureaucratic structures and process that are the hallmark of large public systems. The resulting 'petrification' of policies and practices reduces the diversity and flexibility of approaches to education and training and puts countless hurdles in the way of experimentation. Here our research indicates a number of inherent problems:

Adult educators/trainers and HR practitioners who are ultimately implementing VET policy, report from their work places that the current VET models cause considerable frustration as educators struggle to implement the demands of simplistic, instrumental, technocratic curriculum packages based on a 'one size fits all approach' with an 'overfocus' on 'how to'. (Adult Educators Research Project, 1996-97)

The free exchange of VET commodities and the need to compete in a national or global market has first led to the modularisation of VET curriculum and has resulted in the production of training packages. The extremes of a product and market driven VET sector are highlighted by the following: We are aware of one instance where an overseas aid organisation has been sold an Australian training program (in English) for its non-English multilingual clients, it has then had to purchase another program (to teach English) so they can use the first program. This deal comes with a very elaborate argument for why it is a good idea that everybody learn English anyway.

Continued attempts by VET policy and practitioners who try to sell existing national standards and training products and packages to M & SMEs despite consistent and repeated research that argue against this approach.

6. The complexity of learning outcomes is related to the complexity of learning environments.

As mentioned above, we have developed the concept of 'complex learning environments' to reflect our understanding of 'best practice' in education and training. The complexity or lack thereof of the learning environment impacts on the complexity of outcomes and we are partial to a 'the more complex the better' approach.

A number of projects have highlighted the need to conceptualise education and employment pathways as multi-layered issue that cannot simply be addressed by a simple training = employment solution. (eg. Turner and Mulraney 1996). The establishment of individual and organisational networks on a local and regional basis has been shown to be of great importance to the movement of young people into employment. Organisations that are integrated in their local and regional social and economic environment and form partnerships with other organisations have a good chance to deliver complex competence and employment outcomes.

In a similar fashion, networking and pooling of competence and resources has emerged as a key factor in regional development in several of our projects (RAMP, Alice Springs Youth Accommodation, Small Business Project) and forms part of an overall strategy to develop workbased learning models relevant to small and community - based organisations.

7. Cost benefit analysis models used by the VET sector continue to fail to include such factors as regional economic well-being, social cohesion and the cost benefit to communities of enterprise development: all significant issues when analysing cost-benefits within a social model of economics.

Typically cost-benefit analysis conducted within VET orthodoxy, such as the one used to inform Misko's 1996 analysis, does not include modelling that identifies the relationships between enterprises and the communities within which they are located. (Childs 1997, p.26).

The productivity/training nexus is often also a productivity/restructuring nexus. Training has become a vehicle for job redesign, work intensification, industry restructuring and redundancies which in turn impacts on productivity. Training may or may not form part of the productivity picture, but the discourse of training- its methods and strategies- have been used as a bargaining tool in the process of negotiating workplace change of industry restructuring and as vehicle via which workplace change and productivity is measured. (Wagner, Childs and Stanton 1996, p.42, Childs et al 1997, p3) Despite this, VET practitioners often act as ahistoric and apolitical agents within workplace change processes. The following excerpt from a interview with an employee of large public utility exemplifies this approach:

> The (VET practitioner) came in here with this folder that had 'Teams' on the cover. We'd been told we had to be there at this training- it was part of our new award agreement. She went on and told us all about how to be teams, and we did these activities that were supposed to build teams. What a joke it was! We'd all worked together for years, only we didn't call it teams, supporting each other when we were doing new jobs and things. Only management wasn't happy about those teams, sacked half of us, and then told us that we had to learn to work in teams! Suddenly we didn't know, and this lady from this (training organisation) did....

In the context of small business, the nexus between training/productivity- given current VET approaches- has to date been unproven in either rural (Kilpatrick 1997) or manufacturing sectors (Hall 1997 p.302). This is not to say that micro and small business owner manager's don't learn- rather it is to say that current approaches to small business enterprise development from the VET sector don't work. (Childs 1997).

Cost benefit analyses tend to focus on specific projects in relationship to productivity within single organisations or across particular industries at a particular moment in time. They tend not to include a *longitudinal analysis* of the overall cost of the development of a training infrastructure and training products (such as curriculum and the development of standards). The implementation of mass produced training packages, models and systems since 1989 has been an experimentation that has absorbed large sums of governmental, industrial and individual funds. These packages and standards (at times poorly written technocratic documents that were un-teachable) needed to be adapted to local conditions, at more cost to the enterprise.

Our research indicates that, over the course of a decade organisations that began with a commitment to 'training' (and subsequently spent considerable sums of money establishing training functions, standards, curriculum) are now re-examining the 'training solution' as expensive and time consuming and are adopting a number of strategies as alternatives, including on-the-job accelerated workbased learning (Hawker de Havilland), downsizing and /or contracting out training functions (Integral Energy Australia), placing the onus of skills updates on employees (NSW Department of School Education) or favouring workbased learning and partnerships.

In the case of M & SMEs, owner managers have voted with their feet and by and large have not embraced VET orthodoxy. (Childs 1997) Whereas considerable funding was allocated to providing professional development about 'CBT' in the early 1990s, in 1998 new waves of professional development for this year's training solution are taking place. (For example 'Putting Training Packages to Work' -Australian Council of Adult Literacy Conference, Melbourne, 12-13 March, 1998)

Conclusion

Whilst on the one hand researchers speak of rapid change, increasing complexity and fragmentation in post industrial societies and call for an urgent commitment to social cohesion, bureaucracies (such as the VET sector) institutionalise processes and practices offering simplistic solutions & 'one size fits all' approaches. Inherent discord exists between the many theorists speaking of the future of work in a post-industrial economy and the state of play in VET orthodoxy. We have presented some findings reflecting some practical implications of this discord.

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From the billabong to the mainstream? Australian training and literacy policy developments 1974 -1998

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In the period 1974 to 1998 the Vocational Education and Training sector has been subject to far reaching and profound reforms moved from the periphery to the centre of education policy. In a tandem development, adult literacy has almost identically shadowed the transformation experienced in the VET sector. The ten years of accelerated reform to 1998 in both VET and adult literacy provision have been characterised by significant integration with the restructuring of Australian industry and workplaces.

Both VET and language and literacy can no longer be considered the "poor cousins" to the school and higher education sector but as important elements of the Australian education and training system.

This transformation can be attributed to a range of tendencies within the political, educational, social and economic spheres. The tendencies are:

- The tendency towards global capitalism characterised by the development of integrated world market structures where national barriers are meaningless. In the context of this globalisation, products, services and goods are developed, manufactured and distributed within a worldwide market. Global Capitalism places the organisation of our economic and working life on fast forward with traditional notions of stability and flexibility being constantly challenged. The organisation of work and corporate life is in a constant process of reorganisation and readjustment. It is a symptom of an environment where capital and production are highly mobile and migratory, seeking out the most profitable and strategic options and locations. At the same time the traditional boundaries of knowledge are also disappearing, as globalised production and telecommunications industries merge the sciences of production, design, process and technology with the arts of language, culture, communication. The Information Superhighway has also shifted, not only the traditional "maps" of knowledge, but also its locations. Knowledge is no longer institutionalised by endorsed providers in static locations as there are increasing opportunities for "do it your self learning".
- The tendency towards new literacies arising from the new technologies of global communication and computer technology. Technologies of communication have dramatically reshaped the forms of communication and role of literacy. Computer technology and global media have reshaped the way in which social and workplace communications are now conducted. In this context literacy is no longer just reading text in books but interpreting and negotiating multimodal forms of communication which involve combinations of text, iconographics, graphics and spatial relations. New literacies are emerging from the communications revolution where laser, fibre optic, digital imaging, satellite technology, multimedia and "virtual reality" combine into powerful electronic communication menus. The ability to apply and utilise these new forms of information technology is crucial for the "new jobs".
- The tendency towards a polarisation of work opportunities. The character of the workforce has experienced dramatic change with an increasing amount of mobility arising from the casualisation of work opportunities. While there has been moderate increase in the "new jobs" associated with information technology, the greatest job growth has been in the service industries typified by casualised part time employment. There is a growing service oriented workforce which is highly mobile and needs constant reskilling and retraining in preparation

for the next wave of jobs. In this context the concept of "lifelong learning" is important for this highly mobile workforce.

- The tendency towards industry restructuring and skills formation. In the mid 1980s Australian manufacturing and industry were starkly identified as being uncompetitive within the context of a globalised economy. Paul Keating, the then Federal Treasurer shocked the nation by announcing that Australia would be a "Banana Republic" unless urgent action to restructure the economy was taken. As part of the micro economic reforms to make Australian industry more competitive both the skills and skills levels of workers and the organisation of their work in Australian enterprises has been subject to considerable reform. A cluster of unions, business and government argued that industrial work practices needed to be less hierarchical and confrontational and feature more collaborative workplace relations. The VET system, seen as under performing, was identified as needing reform to lift skills levels to world standards. Similarly literacy was assigned an important role for equipping workers with the communications strategies for the new collaborative workplaces.
- The tendency towards reducing the size and scope of state funded activities and the tendency towards privatisation. Since the 1970s there has been bipartisan political support for concurrently downsizing the public sector and deregulating state involvement in the operations of the economy. This has resulted in either the outsourcing or the privatisation of government departments and enterprises. In the training sector this has led to the commercialisation and corporatisation of TAFE operations and the development of a competitive training market.

The impact of the tendencies in the education and training sector has meant that there is a need for training to:

- Be more frequent and utilise new technologies and new sites
- Reflect changes occurring in industry and the workplace.
- Incorporate the new literacies arising from computer technology and workplace reform.
- Incorporate the diverse views of culture knowledge and practice as Australia participates in new global markets.

Four policy 'epochs' in VET

There are several policy epochs which identify significant watersheds in the development of both vocational education and training as well as literacy and numeracy policy in Australia. In each policy epoch the relationship between the state, industry and workplace training has changed profoundly under the influence of differing policy settings. In a similar way the notion of literacy, its role and relationship to the workplace has also undergone redefinition and changes. In each of these periods the work of teachers has also been subject to significant changes.

The poor cousin epoch. The training sector has been viewed as the poor cousin in relation to the schools and higher education sector. Its origins can be traced to the emergence of the Technical education system in the late 1800s and the early 1900's. The courses and programs were designed to prepare working men in the trades through the apprenticeship system. The courses were linked to industrial awards where skill levels determined wages and allowances within the structure of the centrally established industrial courts. Apprenticeships were time served and structured around the provisions and of industrial awards. Technical Colleges retained a specific working class character where there was strict demarcation between "practical" manual skills and the academic and mental skills attached to literacy. Reading and writing were viewed as means of "improvement" but of little relevance to the practical everyday activities of trades. The provision of language and literacy classes were not seen as the role of Technical Colleges but that of the schooling sector and by the second world war major problems were identified in relation to the literacy levels of Australian men being recruited into the armed services. Major reform did not occur until the 1970s with the arrival of the Whitlam government.

The Kangan Epoch. The fragmented administration, the narrow focus and exclusively masculinised nature of technical training centred on industrial production was challenged by the Whitlam government with the establishment of the Kangan Committee in 1974. Aside from increasing funding by 258% to the newly created Technical and Further Education (TAFE) system, Kangan recommended a greater emphasis on the participation and access of groups and activities excluded from the former Technical system. The Kangan report recommended an expansion into general education, which included literacy, and the inclusion of programs to meet the particular needs of women, Aborigines and Torres Strait Islanders and students of Non English Speaking background.

These initiatives, aimed at increasing the access of targeted groups, ensured that the profile of literacy services was lifted. In this era, literacy services in many states were allocated a special unit status. Many of these units utilised professional staff and voluntary tutors who worked with individual students on a withdrawal basis.

As apprenticeship opportunities collapsed in the mid 1980s and traineeships were established in the wake of the 1985 Kirby Labour Market Programs report, literacy services became a regular program option in both traineeship programs and an increasing number of youth employment programs or equity initiatives such as the Participation and Equity Program (PEP).

Up to the late 1980s the majority of adult literacy services were provided by TAFE in institutional classroom settings by specialist teachers or trained volunteers.

The epoch of the Open Training Market. The policy settings of the 1980s positioned literacy and numeracy skills within micro economic reform and the emergence to team oriented workplaces where the need for effective communications skills was escalating.

As Australian manufacturing collapsed in the face of international competition in the mid 1980s and the levels of apprenticeships dipped, the TAFE system was criticised by industry and government as being poorly prepared for award and industry restructuring. TAFE was identified by successive governments as being inflexible to industry and commercial needs. Following the Deveson Report of the *Training Costs of Award Restructuring Committee,* in 1991 and the National Board of Employment Education and Training (NBEET) report entitled *TAFE in the 1990s,* the policy direction has emphasised a deregulation of provision and the creation of an Open Training Market.

The Open Training Market involved the provision of training by a mix of private and public providers with the objective of integrating training more coherently with the needs of industry. In terms of the structure of the VET systems, this represented a departure from the previous monopoly held by TAFE and reserved a crucial position for private providers in training.

The agenda for change proposed significant and profound changes to the structural linkages between the education and training sectors and the needs of Australian industry and commerce. In this context literacy and language based skills were linked to employment productivity and competencies established by industry itself.

In this policy phase, literacy and numeracy provision shifted from a marginalised and periphery activity outside the VET training system into mainstream industrial training frameworks. Accompanying this was a move away from learning models which isolated literacy as a "reading" activity to the demonstration of communications competence in varied workplace settings. This tendency was accelerated with the emergence of competency based training in the late 1980s

Concurrent with the changes in policy developments, the structures for the recognition and accreditation of training programs were reformed which allowed for greater portability of qualifications in the form of the Australian Qualifications Framework (AQF). The AQF has been represented as facilitating a "seamless web" of course accreditation across the education and training sectors which eroded the boundaries between skills and education and repositioned literacy. The emphasis on time served apprenticeships and courses was replaced with competency based training and the attainment of competencies. Competency based training is a continuing development which has specific importance for language and literacy teachers because competency based training is highly text based.

Critics of the previous training system argued that time served training did not focus on outcomes which were relevant to current industrial practice. A series of government reports stressed the need for a more performance related training system with a clear description of competencies and levels of performance expected from any job. In 1991 the Mayer Committee assigned the task of designing key educational competencies described them as:

> Each area will consist of applications of knowledge and skills in the workplace context. Each application will be referred to as a *competency* accompanied by a set of *criteria* for judging achievement of competency. Within each area, competencies will be arranged in order of difficulty within *strands*. This will enable the identification of a range of performance standards, each consisting of a range *performance standards*, each consisting of a group of competencies of a similar order of difficulty. The resulting matrix will be called a *key competency structure*". Mayer,E., 1992 *Employment Related Key Competencies for Post Compulsory Education and Training*, p3).

Put simply, each job would have a series of specific competencies which would be the basis of any training program. The acquisition of these vocational competencies would be evident through the ability to demonstrate the performance of the cluster of competencies. In this way, competencies are the attributes and skills which describe how a job should be done to ensure quality services and products.

Competencies are established and incorporated in occupational training through the Industry Training Advisory Boards (ITABs) which consist of a variety of industry representatives from business, industry, unions and other stakeholders. They operate at a national and state level and in some industries such as the metals and tourism industries have developed or contracted the development of national training modules using CBT. Competencies are also graded according to levels of performance and this represents an increasing hierarchy of skill complexity.

Policy makers have argued that it is critical that the competencies reflect the contemporary skill requirements of industry and workers. Training programs must then provide workplace mobility to enable participants in training to advance through not only the relevant performance levels but also to be able to use prior learning to gain accreditation for further education. Recognition of Prior learning (RPL) means that participants could have previous work and industrial experience recognised as an educational experience as prerequisite for entry to a more advanced level of training.

It is perhaps most important for teachers to understand that literacy and language course development and outcomes will be significantly influenced by the relevant skills frameworks mandated in occupations.

CBT has not come without its critics and this is important for teachers to understand. Some critics view CBT as unnecessarily reductionist which means there is a tendency to break skills in occupations down into meaningless units. There is also a general concern that CBT presents artificial and static views of skills. How can we account for the 'shelf life' on skills? Does CBT favour practical skills? How are abstract and conceptual qualities to be developed in CBT? Are work skills separate from knowledge and understanding? How are skills to be represented in communal and collective workplaces and contexts? Competency based training presents a limited view of skills which suggests they are individualised accessories that workers need in the work place and the labour market. CBT has been heavily influenced by manufacturing trades and carries with it the culture and knowledge assumptions of those industries which have a masculinised and technical view of tasks. How will CBT developed to describe work in the service and community industries where new job growth is? Will CBT work in these emergent and changing occupations? These are all important questions.

A critical issue for teachers with the move towards self accessed modules is the concern that CBT is not only text based but has cultural and gender biases. The notion of skills in CBT is individualistic and monocultural, failing to look at collective and community contexts for skills which communities such as Aboriginal & Torres Strait Islanders value. Additionally, there is a danger that the skills which women and ethnic communities bring to the workplace are omitted when a masculinised view of "practical" skills is applied. This creates great difficulties for teachers working in the multicultural community of Australia because the cultural inappropriateness of CBT materials contradicts the intended accessibility that promoters of CBT argue is its chief advantage.

In many ways the arguments regarding skill acquisition in the context of CBT are similar to those which typify theories associated with language and literacy acquisition. As theories of literacy have opposing views between those who view the achievement of literacy as a threshold and those who view literacy as a differential achievement of a complex range of tasks in diverse domains, a similar argument exist in skills development. Challenges exist in relation to the need to develop a broad matrix to represent skills rather than unidimensional and narrow demarcations between incompetent and competent.

The epoch of the 'user choice'. The changes promoting the development of the Open Training Market have been reinforced with the establishment of the Australian National Training Authority (ANTA) in 1992 and the implementation of "user choice" by the Howard government in 1996.

ANTA's objective was the unification and integration of the fragmented state based training systems into a national VET system. One of the achievements of ANTA has been the development of national strategies to address the literacy needs of an estimated a 1.3m Australians who do not have sufficient literacy skills to participate in the community and the workforce. *Towards a Skilled Australia: A National Strategy for Vocational Education and Training* also proposed the integration of literacy into vocational programs to meet the needs of under represented groups such as women, Aborigines and Torres Strait Islanders and Non English Background students (ANTA 1994 p 23). The establishment of ANTA was also accompanied by the emergence of a competitive training market consisting of a mix of public and private providers. The *One Nation* statement in 1992 founding ANTA, committed $720m growth funds to be allocated on the basis of competitive tendering. From 1992 a growing proportion of funds previously allocated to the public provider were placed on the Open Training Market. This open tendering had the dual effect of facilitating the emergence of private providers and reduced the funds directly allocated to TAFE. These changes ensured that there would be an increasing number of private providers. In 1993 the number of private providers in all states was 782. In 1997 there are over 900 private providers in Queensland alone.

The acceleration of "user choice" has been the fundamental mechanism for distributing training funds by the Howard government. "User choice" ensures that public funds will flow to individual training providers to reflect the choice of the client , in this case industry and employers, in selecting a preferred training provider. Under the umbrella of "user choice" employers are now able to select their preferred provider, the mode of delivery, the location and the means of assessment. In this context there has been a dramatic shift towards enterprise based training and on site instruction. Traditional methods of institutional classroom based teaching are changing in response to "user choice" and are being replaced by training methods such as mentoring, coaching and the use of workplace assessors at the enterprise level.

The implementation of "user choice" and the deregulation of the VET system is possible through the development of the "National Training Framework". This consists of two interconnecting components: Training Packages and the Australian Recognition Framework (ARF). The training packages provide for a series of endorsed and non endorsed components. The endorsed components are limited to industry standards, assessment guidelines and qualifications. The non endorsed components include learning strategies (curriculum, teaching and learning), professional development materials and assessment materials.

Consistent with the shift to integrating literacy in VET frameworks, literacy and numeracy skills are explicitly addressed within the competency standards in the Training Packages.

The training packages are preproduced and prepackaged national training guides to meet industry competency standards that will be available to any registered training/assessment organisation at one stop training centres. Specific literacy qualifications are not required to use the Training Packages.

These reforms to the training system have reshaped and redefined the nature and scope of teachers' work. Teachers' work is now resituated within onsite and enterprise settings. Teachers are required to have an active role in brokering and negotiating the training arrangements with training clients. A direct relationship with students is now mediated by employers who have significant power in determining the nature and character of training.

Training packages have also reshaped the teachers' relationship to curriculum with the role of teachers arguably being nothing more than a delivery agent. The "teacher free" concept of learning is reinforced with the introduction of workplace assessors, workplace mentors and industry trainers. Teachers' work in the context of these changes is moving away from direct provision to facilitating and negotiating the events, frameworks and process of learning that are conducted by others. In addition the growth of the competitive training market means that teachers will be increasingly involved in sourcing funding in both private and public agencies that employ them. The work of teachers have moved away from traditional face to face classroom models to broader notions of a learning co-ordinator.

After ten years of profound reform the VET system had moved from the periphery of education policy into the centre of industrial and economic policy with a national focus. The fundamental characteristics of the Australian system can be summarised as:

- The establishment of the training industry and the emergence of a mix of private and public providers of training in the context of a competitive training market (Deveson, 1990)
- The distribution of training funds on a competitive basis to a mix of providers (Deveson, 1990; ANTA,1994).
- The introduction of industry based competencies as the foundation for curriculum development and linkages of all programs within the Australian Qualifications framework (ESFC,1992; AEC,1991; Mayer,1992; ACC,1996)
- An emphasis on transferring the location of vocational training to on-the-job and onsite delivery and away from institutional based learning.
- The introduction of "user choice" where employers select the preferred provider of their choice as the prime principle for distributing funding.
- The introduction of industry wide Training Packages linking National Competency Standards, Assessment Guidelines and National Qualifications as the primary training curriculum package.

A decade of reform in English language and literacy

The fusion between VET and Literacy provision was reinforced by a succession of policy documents and working parties from the mid 1980s . The progressive movement of literacy and language away from the periphery of educational policy was first made with the Australian Language and Literacy Policy (ALLP) in 1991.

The ALLP was a landmark policy which recognised the diversity of linguistic and cultural heritage in the Australian community and connected this institutionally to the provision of educational services, information services and training policy. The ALLP recognised the fundamental importance of proficiency in English to the effective participation in all aspects of leisure, work, education and training. It also recognised the importance of languages other than English (LOTE) in the Australian community and the need for support for Aboriginal and Torres Strait Island Languages.

Most importantly the ALLP recognised that there needed to be an integrated national framework of equitable access to language and literacy services for those estimated 700,000 Australians of non-English speaking background and those with low levels of literacy. The ALLP stated that no Australian should be denied medical services and that the same standard should apply to language and literacy services. The ALLP linked this policy objective with the need to maintain an innovative employment, work and training practices by emphasising significant funding for workplace and vocational training. The ALLP estimated that efficiencies from improved literacy levels have the potential gain to the economy of $3.2 billion annually.

The first national policy instrument for the implementation of the ALLP was established with the development the National Collaborative Adult English Language and Literacy Strategy (NCAELLS) in 1993. One of the objectives of NCAELLS was the expansion and diversification of efforts to integrate language and literacy in vocational education. This included strategies to integrate language and literacy into competencies and develop appropriate articulation and pathways for students involved in language and literacy programs. The NCAELLS also identified the need to train specialists in writing integrated curriculum

The importance of Literacy in the context of communication skills needed for obtaining employment was affirmed in the Finn report stated that:

Language and Communication skills, and more specifically, literacy skills are of fundamental importance to all aspects of life including education, training and employment (AEC 1991 p 71).

The momentum for the integration of English language and literacy skills in vocational education was reinforced by the National Board of Employment Education and Training in a major report published in 1993. In *Incorporating English Language and Literacy Competencies into Industry standards* , NBEET identified the need to equip workers with communication strategies to meet the needs of industry restructuring and the urgency of developing models that integrate English language and literacy with industry competency standards.

The identification of literacy and numeracy competencies that are essential for work and the development of the characteristics of integrated programs was conducted by Courtney and Mawer(1995). *Integrating English Language Literacy and Numeracy into Vocational and Training: A Framework* the authors proposed a number of principles and strategies as well identifying models involving integration. The authors importantly identified the need to recognise:

- That literacy was a social process,
- That students had diverse backgrounds that needed to be recognised in programs
- That learners brought skills and experiences to program settings and this needed to be incorporated in programs
- That programs should be consistent with the literacy and a requirements of the job or vocational area
- That integrated models have significant efficiency and productivity outcomes.

One of the most significant initiatives which demonstrates and models the linkages of literacy and numeracy with workplace and industry reform is the Workplace English, Language and Literacy Programme (WELL). Since commencing in 1991 over 65,000 workers have participated in WELL training programs. Under the WELL program the Commonwealth government provides funding to industry or training providers to conduct workplace related literacy programs. The training which also requires an employer contribution, has included:

- Improved workers access to skills and training development.
- Improved workplace communication.
- Improved occupational health and safety in the workplace.
- Improved worker's job security and career prospects.
- Contributed to enterprise level productivity.

Over 1,000 enterprises have utilised WELL funding since it started in 1991. One of the major issues and controversies associated with the moves towards integration has been the question of how to merge the demands of competency based training to the diverse needs and cultural backgrounds of literacy students, the their training settings and how their achievements should be reported. The National Framework of Adult English Language, Literacy and Numeracy Competence and the National Reporting System are an initiatives which addresses these issues.

The national framework of adult english language, literacy and numeracy competence

Recognising the need to response to the agenda of change and reform in a proactive manner which addresses the broad social dimensions of literacy, members of the adult education community sought to develop a framework which interpreted literacy skills as social practice. This view of literacy practice challenged the narrow functional and instrumental definitions associated with workplace skills that featured in the rhetoric of training reform. The move was away from unitary constructs of literacy towards building a matrix of literacy performances. This matrix constructs literacy as a series of social practices which vary according to social contexts and whether people are working with assistance, independently or collaboratively

The National Framework of Adult English Language, Literacy and Numeracy Competence has great value as a document which maps the possible contexts and social practices. The Framework could act as a guide to establishing a coherent practice, competence criteria, standardised terminology and progress indicators which can be adapted to various contexts, sites and needs. Such a document also assists in informing industry of the standards in language and literacy in the language of CBT. The National Framework has defined a skill as comprising of aspects, stages, and phases of learning in a mandela matrix (See Fig 1.).

The chief advantage of this is the recognition of communication as both an individual and collaborative interaction in personal and systemic settings utilising a variety of different technologies. Importantly the Framework does not seek to impose a series of levels of literacy skills with which to evaluate people. Rather the advantage of the framework is that it provides guidance on how a an individual may use a repetoire of competence over different social situations.

The national reporting system (NRS)

The wider range of students, programs and settings for the provision of language and literacy services that accompanied its integration with vocational education highlighted the needs for a standardised form of reporting to assist stakeholders understand the achievements of students. As the sector become more diversified the need for common understanding and interpretation across stakeholders became essential to facilitate student pathways. The National Reporting System (NRS) incorporated the National Framework of Adult English Language Literacy and Numeracy Competence with the objective of providing a broad tool that spans a broad range of theoretical positions in language, literacy and numeracy. The NRS provides students with a report of their achievement which provides a reference point for industry, enterprise personnel, employment services providers and curriculum developers. The NRS identifies five levels of competence and six aspects of communication. The six aspects of communication levels of broadly conform to the paradigm of literacies established in the National Framework of Adult English Language Literacy and Numeracy Competence. Further reporting information is represented in the form of indicators of competence, conditions of performance, workplace and social contexts, assessment principles as well as language literacy and numeracy performance strategies.

The National Reporting system has been endorsed as the primary report tool for WELL programs from 1998 and a number of federally funded literacy and numeracy programs. Paradoxically, the NRS promises the practical benefit of a universal instrument applicable in all settings with the difficultly of attempting to map diverse program outcomes against a standardised indicators. As an instrument of national policy the adoption of the NRS has been hampered by the politics of interest and veto at the level of the states and providers. The NRS, as the first national measure of literacy, language and numeracy achievement is still yet to reach its potential. The possibilities for the NRS will be determined by the extent to which the teachers role moves from direct provision to program management that includes a new range of functions.

Teachers work: From technical teacher to vet practitioner

The policy reforms in vocational and adult education have significantly reshaped the dimensions of teachers' work. Teachers are facing the realisation that successful participation in the competitive training environment is dependent on a repertoire of skills quite different from those associated with traditional roles of teaching. There are a range of new roles that emerge from participating in competitive training markets which includes the development of a client focus as well as marketing, budgeting, liaison, networking and the development of new skills in the delivery of flexible customised learning materials.

According to Lepani, the VET practitioner will be working in a range of roles and often within the context of a corporate structure emphasising self managing teams in organisations characterised by flatter management structures. In these new devolved and performance oriented work structures, Lepani has argued that teachers will be repositioned as managers and facilitators of learning in the context of a competitive and dynamic learning environment. This new environment will be typified by learning and teaching strategies which incorporate mixed mode and multimedia delivery that are customised to meet the needs of specific clients.

There is now a significant contradiction in the positioning of teachers' work which operates at two levels.

At one level the policy agendas associated with "user choice" has the potential to contribute to "teacher free" learning environment typified by the "deprofessionalisation" of teachers' work. Training packages are in effect context free packages that are free of teacher input and shaped without responding to the needs of learners. In this scenario the ability of learners and teachers secure control over the direction of their learning is limited

At another level the integration of language and literacy within industrial frameworks and the use of new technologies of learning that requires specialist knowledge, places teachers in a particularly influential situation. The identified lack of a training culture in industry assigns teachers a particularly powerful role in negotiating and determining the nature and shape of the learning experience.

The success of this advisory role is almost entirely dependent on the clarity with which teachers understand their new roles and are able to convert this to practice in a variety of settings. Research conducted by a (Kell, Balatti, Hill and Muspratt 1997, this volume) analysing the impact of the Open Training Market on TAFE Teachers' work in Queensland suggests that there is lack of awareness of what the new work practices are. Most of the teachers interviewed understood the need for flexibility but lacked an understanding of how this might translate to actual practice in job design. The research suggested that teachers lacked an understanding of the operating principles and exemplars of leading practice in the new environment. Staff interviewed found it hard to visualise what their work might look like, but more alarmingly lacked a theoretical framework for adult teaching and learning that linked with the flexible delivery. This research highlighted the urgent need for an awareness of the theoretical frameworks of adult learning that adopts a learner centred approach to integrate with the diverse needs of participants and clients in the varied settings associated with flexible delivery.

Clearly there needs to be accessible system wide professional development that provides guidance to teachers on both the theoretical and practical challenges which emerge from flexible delivery and "user choice". The task is made more difficult by the declining infrastructure and resources devoted to professional development since the late 1980s. The ambitious intentions of the reform process will not eventuate without adequate levels of professional development that provides teachers with the theories, techniques, skills and capacities needed to fulfil the additional roles of the VET practitioner. Professional development will need to provide the guidance for teachers to ensure that professional standards are maintained and that the interests of students are not sacrificed by a reductionist minimalist view of training.

The policy settings that have merged language, literacy and numeracy with vocational education and training has the potential to provide participants with practical and involving learning experiences. The future VET practitioner has the policy platform to facilitate a reflective and critical focus in Australian workplaces. Rather than feature a narrow functionalist agenda, the commitment of the VET agenda to access and participation has the potential to create significant social, economic and political changes through literacy and numeracy services. These profound changes have now enabled literacy and numeracy provision and training to move from the stagnating still waters of the billabong to the swiftly moving waters of the mainstream.

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Policy issues related to flexible modes of delivery of VET

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The adequate provision of education and training services to people living in rural and remote areas is a major challenge for governments and communities in Australia, due to its sparsely populated rural area. In recent years, an range of flexible modes of delivery have been developed and are seen as a promising strategy for improving the relevance of and access to education and training, particularly for individuals in rural locations. In Western Australia, this hope has been only partially and inconsistently realised to date. Industry and equity groups, in particular, are concerned that the promise of flexible delivery of VET in remote areas has not been fulfilled. There appears to be a lack of clear policy directions for the flexible delivery of VET. Why is this so? What issues influence policy in this area?

This paper raises several issues which are suggested as hindering the development of flexible delivery policy. These issues relate to defining and categorising modes of delivery, perceptions about the influence of mode of delivery on learning, lack of clarity in undertaking cost-benefit analysis of modes of delivery, and a pre-occupation with technology rather than pedagogy. The issues are placed in the context of current research on teaching and learning in higher education and a study of the current state of education and training services provided to rural and remote communities of Western Australia.

Changes in VET

The past ten years have seen unprecedented change in the Australian vocational education and training (VET) sector. Some of the major initiatives of the national training reform process include:

- creation of a national VET system well ahead of the other education sectors;
- move to competency based training as a basis for other reform, but with insufficient consultation with training providers (Harris, 1995);
- a new qualifications structure with international credibility and bridges to the secondary and university sectors;
- the development of a competitive training market involving both the private and public sector;
- increased user choice through opening the TAFE monopoly and encouraging industry to take a greater responsibility for training; and
- adoption of a client focused, flexible delivery approach but with some confusion over who is the client, industry or the student, and some doubt whether flexibility will maintain or improve quality.

Both training providers and industry in rural WA are concerned that several of these initiatives are not as yet well developed in their region. There is particular concern about the extent of user choice and the flexibility of delivery (English & Cummings, 1997).

It is the issue of flexible delivery which is the focus of this paper. The analysis of this initiative will concentrate on four main questions, each with a more focused sub-question. First, how should flexible delivery be defined? The tendency is to concentrate on client choice but is this sufficient? Second, how does flexibility relate to the teaching and learning process? Has the concentration on delivery, technology and outcomes resulted in the importance of the teaching and learning process being ignored? Third, how can the most appropriate mode of delivery be identified? This question is often operationalised as 'Which type of communications technology is most cost effective?' Has the emphasis on cost benefit analysis blinded researchers and policy makers to the other important characteristics of delivery modes and technology? Fourth, should the focus be on technology or pedagogy? Has the focus been on the former at the expense of the later?

How should flexible delivery be defined?

The move to a more flexible approach to the delivery of education and training is a world wide phenomenon. It is driven by increased competition, changing demographics of the student population, and advances in computer and communications technology. However, there is also an underlying theme that more flexible approaches to teaching and learning can actually improve the quality of the learning process and enhance student outcomes. It is therefore important to change the focus from one concentrating only on delivery (teaching) to one focusing on the process of teaching and learning. A view of education and training as a process is critical to a better understanding of flexibility.

Although there are a number of definitions of flexible delivery, the National Flexible Delivery Taskforce (1996) provides one of the most comprehensive definitions

Flexible delivery is an approach rather than a system or techniques; it is based on the skill needs and delivery requirements of clients, not the interests of trainers or providers; it gives clients as much choice as possible over what and when and where and how they learn; it commonly uses the delivery methods of distance education and the facilities of technology; it changes the role of trainer from a source of knowledge to a manager of learning and a facilitator.

There is clearly a deliberate focus on the needs and wishes of clients, particularly in reference to four areas of flexibility - what, when, where and how to learn. Although, these four areas of choice are common across most definitions of flexible delivery, an examination of them raises some concerns for the quality of education and training.

The first area of choice is about what is learned? Choice of content has been an element of education for some considerable time in the form of options, both within and across courses. In the Australian VET sector, the development of a highly flexible modular approach to curriculum has created the opportunity to increase choice of content considerably. However, an unguided choice of modules raises concerns about a 'pick-a-box' approach to skill acquisition which may result in students failing to acquire a coherent set of skills useful in the job market. There are other means to improve choice over the content of courses already in wide use in universities (Laurillard & Margetson, 1997). For example, a problem based approach to curriculum provides a learning experience which is not content specific but rather focuses on the learning of skills. The teacher determines the desired outcomes and possibly, the boundaries of the content, but lets the students select the specific content area. This approach is well suited to flexible delivery and the use of a range of technology. The recent development of training packages in VET, with their focus on outcomes rather than content, offers an opportunity to use this type of approach, but it is unclear to what extent this is happening.

A second common characteristic of the definitions of flexible delivery is that the client should have a choice about when learning takes place. The current thinking in VET seems to be it should be provided when it meets the demands of the learner or employer rather than when it might be most effective. Research and experience indicates that learning can best take place when the learner is receptive to the information. This suggests that choosing when delivery takes place should include consideration of when the learner can focus on the information (eg is not too tired, pre-occupied by other activities), when the learning can be supported by others, and when learning can be reinforced by practice or discussion. The learner or their employer may not be the best judge of when these conditions will exist so the training provider should provide guidance in determining when learners are likely to be most receptive to their material.

A third characteristics involves choice about where the delivery or learning takes place. What is the best learning environment is a fundamental pedagogical issue and it depends partly on what is being learned. However, there are some basic considerations, for example does the learning environment provide a reliable supply of resources (eg remote access to the Internet or printed supplies), are there appropriate support systems (eg remediation facilities, quiet study areas, appropriate equipment) and are there ample opportunities for interaction with teachers and other students (either face to face or through communications technology). These are basic criteria of any good teaching and learning environment, and learning will be hampered where they are not provided. Once again, the conclusion is that the teaching and learning locations should have minimum requirements based on criteria for good pedagogical practice.

The final common characteristic is choice over how a learner learns. The move toward a more student centred approach is often a euphemism for 'independent learning'. In many flexible learning initiatives, the emphasis is on moving the learner out of a classroom environment into selfpaced, independent study, computer based approaches. Often this is driven by poorly informed notions of savings in staff costs and capital expenditure. However, Bates (1995) shows that high quality self-paced study is not cheaper except when very large numbers of students are involved. This is because the development costs of such materials are very much higher than classroom based materials and the savings only comes from being able to offer it to large numbers of students through cheap (to the provider) forms of technology. Another consequence of the concentration on the learner as an independent learner is that it shifts the responsibility for learning onto the learner. This certainly suits some learners, eg mature aged or professionals, but it may not be suitable for all learners, eg high school leavers. Instead of the focus being on the learner as an independent entity, it is argued here that the focus should be on the learner-teacher interaction. As pointed out above, teaching and learning is best viewed as a process, and it is largely driven by the interaction which takes place between the teacher and the learner (Laurillard, 1993)

The discussion above about a definition for flexible delivery highlights the need to find a balance between choice and quality education. It is likely that completely open choice in selecting when, where, what and how one learns will result in issues of quality being overlooked. It is argued here that choice should be constrained within the parameters of good pedagogy.

How does flexibility relate to the teaching and learning process?

It is important to note that considerable flexibility can be and already is achieved through innovative approaches which do not require special technology. For example, offering courses in the evening, on weekends or during the summer provides considerable flexibility which may be sufficient to meet the requirements of a market sector. On the job training is another form of flexibility which reduces time away from work and can provide guided learning experiences in 'authentic' learning environments not easily simulated in the classroom (Stevenson, 1994). Finally, group projects offer a wide range of flexibility in content, place and timing of training. However, each of these approaches still requires that the training provided meets the basic principles of good pedagogy.

There is a view that new modes of delivery particularly those using communications technology provide the opportunity for or demand different approaches to teaching and learning than is traditionally used in classrooms or in correspondence/distance education. In general these new approaches are seen to involve more independent approaches for the learners and more facilitating roles for teachers. However, this is about as far as much of the discussion on teaching and learning goes in most policy documents. For example, the ANTA National Flexible Delivery Taskforce Final Report concentrates on client access, information choice, the training market, technology, resource allocation and staff development. The WA Department of Training Flexible Delivery Draft Policy Framework follows this approach concentrating on creating the training market, fiscal restraint, changing learner demographics etc. It is only in the staff development policies that the new roles of teacher and learner are even mentioned. There is hardly a mention about improving the quality of teaching and learning through using technology to increase flexibility.

However, there has been considerably more attention paid to improving the quality of teaching and learning within a flexible delivery approach in the university sector. Laurillard (1993) has critically analysed the likely new scenarios which flexible teaching and learning will bring to higher education institutions. She concludes that the basis for high quality teaching in higher education is based on an approach which involves a dialogue between the teacher and the student which discursive, adaptive, interactive and reflective. In a similar vein, Harisam (1995) argues for a conversational approach to learning. She sees teaching and learning as an exchange of ideas through which the teacher understands what the learners needs to know and imparts basic ideas, and the learner expresses their understanding of the content and seeks feedback on its accuracy. Both of these writers emphasise the interaction between teacher and learner as central to quality education and training.

An interesting consequence of this interactive approach to education and training is that it is very appropriate for flexible teaching and learning. But not where a student sits isolated with a computer communicating only with course material or access to the Web in a step by step approach or as open browsing through unlimited resources. There is an essential need to create a suitable environment in which the learner can be guided through the material and in which the learner is in touch with other learners and with teachers. The teaching and learning process needs to be designed as a guided journey through structured information resources with constant checks that the student is on track. This clearly has implications for what technology is used, how the course is structured, and the level of choice a student has in selecting what, when, where and how they study.

How can the most appropriate mode of delivery be identified?

There is a very strong propensity in policy development on flexible delivery to attempt to compare the various modes of delivery (usually technological media) on a cost/benefit or cost/effectiveness basis. In adopting this research model the following assumptions are usually made - the media are directly comparable, the appropriate data is available and benefit or effectiveness can be measured. There are real doubts about each of these assumptions.

In order for comparability to be useful it is necessary that several different options be available in one location. Outside of metropolitan areas and large regional centres there is seldom the infrastructure or student demand to justify offering several delivery modes. It is also simplistic to assume that students when choosing a study option will either rely largely on cost and benefits or be able to determine individual cost and benefit for the possible delivery modes.

A second problem lies in the lack of appropriate data about cost and benefit. Seldom is the data on residence, media availability, reasons for withdrawal from a course and time or financial cost available. A proper cost benefit analysis requires a prospective study in which this information is deliberately collected for the purposes of the study. There is currently such a study being undertaken by Bates at the University of British Columbia.

Finally, there are real problems in determining what are legitimate cost and benefits. A commonly used indicator of cost benefit is the total cost of the activity divided by the number of students completing a unit of vocational education and training where total costs are made up of provider costs and costs incurred by the student. An interesting feature of flexible delivery is that costs for students are generally seen to be considerable savings to the student in terms of time and costs of travel or living away from home when compared to traditional classroom delivery. These savings are likely to be important economic factors determining whether a particular student enrols and completes a specific unit. They are therefore at the centre of the issue of access and participation. The implication of this is that the enhanced access and participation from making flexible modes of delivery available is reflected in the cost savings to individuals. Therefore, although a flexible delivery unit may cost more to establish and even be more costly to provide per student, the savings it provides to students compared to delivery in a conventional classroom, and the resultant increased enrolment and completion rates, may result in it being more cost effective. For example, a distance education service which is used by a few individuals in very remote locations may well be judged less costly per unit, and thus more cost effective, than if the service were used by more individuals in a central location. Thus cost/benefit analysis of flexible delivery needs to consider more than the cost to the provider of production and delivery, it needs to consider savings to the learner. Data of this sort is much more difficult to collect and analyse.

If cost/effectiveness research is not the most suitable basis for deciding which medium of delivery to use, on what can this decision be based? Bates (1997) argues that the real issue is the cost of delivery and benefits for learners of each media in the particular circumstances. Information on how to cost these delivery modes and whether that is a viable mode is he argues more important than comparative cost/benefit analysis. He proposes a structured process to determining which technology is likely to be the most useful medium of delivery in a particular setting. This process, termed ACTIONS, comprises the following seven considerations:

- Access: whether the student market has access to the technology
- Cost: what is the cost of providing the training using this technology
- Teaching and learning: can the necessary content be delivered using this technology
- Interactivity and
- User-friendliness: can the technology provide the appropriate level of interaction and is it friendly for students to use.
- Organisational issues: what changes need to be made in the training provider to effectively and efficiently delivery training using this technology
- Novelty : how new is the technology and will it be rapidly upgraded thus requiring additional capital or development expenditure.
- Speed: how quickly can training be developed and modified using this technology (Bates, 1995).

Although there is a tendency in the education and training sector, as in many other areas, to adopt the latest fad in delivery technology (Kearns, 1997), the above approach can be used to avoid making inappropriate choices. An example from the last few years illustrates how a lack of a systematic approach to the adoption of delivery technology can increase the chance of inappropriate choices. In the early 1990's, the WA Department of Training implemented a strategy to use live television with two-way audio communication to transmit lectures to telecentres in rural and remote communities. The response from students to this initiative was to tape the lectures and ignore the opportunity for two-way audio links. These tapes were then lent out to students to take home to watch at a time which suited them. WA has since changed to a much lower cost strategy of recording the lectures centrally and distributing the tapes to community agencies for local lending. This much lower cost solution also better suits the learner market.

Should the focus be on technology or pedagogy?

In the mid stages of the reform agenda, some commentators were emphasising the need to concentrate on pedagogical issues such as criterion-referenced assessment and how best to acquire competence (Stevenson, 1994; Harris et al, 1995). However, a range of other issues such as user choice, developing a training market, and flexible modes of delivery diverted attention from developing good competency based teaching practices. There is now a growing recognition that good teaching matters (Bates, 1995) regardless of the mode of delivery.

So what is good teaching in higher education? Research based on several years of examining the highest quality of teaching in Australian universities has identified the following eight characteristics of quality teaching:

- An organising principle underlying the whole course of study
- Staff who are committed to the organising principle and good teaching
- Flexibility both within the structure of the course or within individual units in the course
- An ethos of caring about the welfare of students
- Teaching which promotes deep learning
- Regular and varies feedback to students on their performance and progress
- Assistance to students identified as 'at risk'

- Exposure to real world experiences related to their course material

Flexible delivery which offers a total choice (pick a box) may be counter productive as it excludes some sound pedagogical principles eg group learning, reflection, a unifying underlying principle, conversation with teacher. Instead, it may be preferable to limit choices to suit the target market and/or to limit choice to within a structure. In the end, choice without accompanying good pedagogy is a recipe for poor learning.

Conclusion

The issues discussed above have focussed on ensuring that pedagogical concerns are not ignored in the development of more flexible delivery approaches in vocational education and training. It is argued that many of the principles of good teaching and learning practice are compatible with flexibility. Furthermore, it is suggested that the choice of clients should be constrained within the boundaries of high quality pedagogy.

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Informing policy and practice at the micro level

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The Canberra Institute of Technology's Assessment Project has used a teacher-centred action research approach to encourage educational change. Practitioners identify what they consider to be an important assessment issue to examine and generate concept proposals for their projects. They then carry out the research, present their findings to their peers and implement and evaluate the changes. This approach acknowledges that individual teachers are more likely to accept and implement better practice when they are given the opportunity to actively participate in research, development and decision-making processes. The outcomes of their research have been influential in generating better assessment practice. The findings have also informed the development and revision of policies at the institutional, faculty and departmental levels. More importantly, teacher-researchers have moved forward with enhanced self-confidence to accept a major role in the professional development of their peers. The Institute Assessment Project has generated a growing interest in research as an agent for change within CIT. This paper reports on the changes wrought by some of these research projects and presents evidence of better assessment policy and practice at the micro level.

An outline of the Institute Assessment Project

Since 1994, the Institute Assessment Project has received specifically earmarked funding to investigate and report on assessment procedures within CIT. Designed to improve assessment practice, the Project's first aim is to encourage teachers to critically examine their own methods and processes for assessment and to then determine better ways of achieving quality assessment processes and decisions.

On an annual basis, teachers are invited to submit concept proposals on innovative assessment practices or assessment issues and problems that they are confronting. They are required to provide a clear description of their proposed research topic, including: an aim; a set of objectives; the research methodology; the timelines; project management roles and responsibilities; and an explanation of the project outcomes/products.

The research undertaken by teachers can be quantitative or qualitative, and they are encouraged to extend their research skills in the process. Generally, the methodologies employed are a blend of statistical analysis of survey data supported by information gathered through open-ended questioning and semi-structured interviewing. The emphasis is very pragmatic. Teachers are seeking solutions to day-to-day assessment issues or problems, or investigating more innovative approaches to meet the demands of ever-changing training environments.

One of the aims of the Institute Assessment Project is to share the results of projects with others within the Institute, therefore, proponents must also agree to adhere to the information dissemination strategy that has been put in place for the Project. This strategy includes informal status reports which are published in the internal newsletter *Assessment Update* and a final written report published by the Institute as an occasional paper. In addition, teacher-researchers must also participate in relevant meetings and professional development activities where their findings can be discussed and debated.

This emphasis upon information sharing is based upon the concept that:

> The more individuals share what they have learned with each other the more the common stock of professional knowledge is extended and enriched. And the more this common stock is developed in response to the changing contexts of professional practice the

> greater is the individual's capacity to diagnose the problem situations encountered and to respond appropriately. (Elliott, 1985, p214)

Other important aspects of these concept proposals are the requirements for proponents to estimate the number of hours for which they require funding; the level and type of commitment that their faculty is prepared to give their project and the formal support of the proposed project by their departmental head/supervisor and Head of Faculty.

To date, over sixty projects have been funded and in excess of two hundred and twenty teachers have been involved. In 1996 the project was further supported by ANTA funding under the *Demonstrating Best Practice in Vocational Education* national project.

Evaluating the project's impact: ascertaining the extent of change

Whilst no formal evaluation process has been set in place for the Institute Assessment Project, a decision was made to attempt to gauge the effectiveness of the Project by gathering evidence in a range of ways, over time.

The principal methods used to ascertain the achievement of the Project objectives have included standardised open-ended interviews with key informants and the analysis of Institute, faculty and departmental policy documents and other assessment-related materials linked to particular research projects.

To determine the impact that there has been on individual teachers, ongoing discussions with and between teachers have provided essential feedback. Teachers have been encouraged to critically reflect on their assessment practice and to share with their peers within departments and with their colleagues across the Institute. This discourse has also been monitored as part of the informal information gathering process.

Action research: initiating educational change

Smith and Lovat (1990) provide a definition of action research which acknowledges the very personal nature of this approach in achieving enhanced professional practice leading to educational change.

> It is a process entered into by us because we wish to improve our own practice, and understand in a more critical manner the reasons and basis for such practice, and the contexts in which it takes place. It is a process of practitioner research to improve practitioner practice, organized and controlled by the practitioners themselves. (Smith and Lovat 1990, p173)

Gay (1992) supports this notion, but goes further by suggesting that action research's focus on local researchers working on local issues within local environments ensures that the outcomes cannot be generalised to other educational settings. He sees this lack of transferability as a major limitation and suggests that the development of a sound theory is a more legitimate way of effecting educational change than that which can be achieved through a series of action research projects (Gay 1992, p11)

Despite Gay's concerns, action research does provide practitioners with the opportunity to focus on the teaching process, the outcomes of learning and the interconnections between the two. In addition,

> ... action research emphasizes the educator's own, often intuitive, judgments of teaching and helps to locate one's vision of good teaching within those of others involved in the educative process. In so doing it helps to make the educational process continually problematic. This continual revisiting of issues and practices builds a new kind of theory-practice relationship, one in which our understanding of education is always partially correct and partially in need of revision. (Noffke 1995, p5)

It is within this theory-practice framework that the Institute Assessment Project is grounded. Teachers generate research projects, having given consideration to their own context and experiences. Not only do they own their projects, they make the important decisions to implement new or improved processes; to review outcomes and to modify further. The goal is to achieve what they and others confirm is a better way of doing things. These projects have become an effective tool in educational change.

But what is educational change? Fullan (1991) observes that innovative practice is central to educational change and that such innovation is multidimensional in nature. He states that change in practice entails three essential elements: new or revised learning materials, novel teaching strategies and the modification of people's beliefs and pedagogical assumptions about the educational process. Furthermore, Fullan suggests "All three aspects of change are necessary because together they represent the means of achieving a particular goal or set of goals...change has to occur in practice along the three dimensions in order for it to have a chance of affecting the outcome" (Fullan 1991, p37).

The Institute Assessment Project provides practitioners with the opportunity to address all three components which make up Fullan's concept of "change in practice".

Evidence of change in policy and practice

At the heart of all of the projects conducted under the Institute Assessment Project has been the concern to improve the validity, reliability, fairness, cost-effectiveness and credibility of the assessment carried out by teachers in CIT. As a consequence, concept proposals have not been automatically accepted and the projects funded. There has been a relatively rigorous selection process. The project must be innovative or address a clear assessment need; the outcomes of the project must be clearly useful and useable by others across the Institute; projects should build on previous work or be seen as ground breaking; and the project has to be cost-effective. The aim of the last criterion is to ensure the maximum number of projects for the funding available while maintaining quality and a degree of diversity.

This concept of diversity is significant. By ensuring a range of project types, topics, products and teacher involvement in the Project, the pool of information on assessment and the potential for change in policy and practice is increased. Teachers need to be able to relate to the research activities that are taking place and the information that is being disseminated. Thus, research has been undertaken by teachers drawn from the six faculties in the Institute. Some projects have been undertaken by individuals, whilst others have involved groups of teachers or whole departments. Yet others have involved teachers drawn from disparate teaching areas.

Projects have covered such topics as graded competency based assessment materials and strategies; an investigation of reassessment in selected courses and the effective management of reassessment; assessment strategies for NESB students; an evaluation of assessment policies and practices in one department; an evaluation of integrating Communication modules in a computing course; an examination of work-based managed projects and investigations of various aspects of assessment in flexible delivery.

Impact on assessment policy in faculties and departments

These research projects have been influential in the review of policy on assessment, including the Institute Assessment Policy and supporting policies developed at faculty and departmental level. Project outcomes, and the teacher-researchers themselves, provided input into the review of the overall Institute assessment policy in 1996. During the consultation phase, teachers were able to provide meaningful advice on how the policy should be shaped. Their experience and evidence was often gleaned from working through assessment problems and issues.

Within faculties, guidelines have been formulated to promote a consistency of approach to assessment across departments and campuses; to provide documentation for teachers to follow, and to implement valid, reliable, fair and cost effective approaches which also provide flexibility for adult learners (Faculty of Communication and Community Services 1997).

These micro-level policies and procedures cover reassessment; information for learners; validity and reliability; fairness in assessment; appropriate and timely feedback and reporting requirements - all of which have been subjected to scrutiny under the Institute Assessment Project. Together, these projects and policies have influenced the evolution of better assessment information for teachers and students and anecdotal evidence gathered within the Institute indicates a clear link between enhanced information and improved assessment practice.

Shifts in personal perspectives and pedagogical assumptions

In interviewing teacher-researchers on the impact their research had on them, responses have been consistently positive. Having the time and the space to look deeply into the issues that they had only been able to touch on cursorily previously, they see as a real luxury. Teachers have noted that undertaking a project is the best form of professional development, because they are in there doing it rather than getting information 'second-hand'.

One researcher saw an additional value coming from her project. She had learned new qualitative research methods which she was then able to pass on to her students. Another, whose background was in scientific research, considered she had developed different skills which she could now apply in the educational arena. Yet another experienced researcher commented "Each time I utilise these skills I learn a different dimension in the investigative process".

Several teacher-researchers have also stated that they are much more prepared to challenge their old assumptions and those of their colleagues because they have an improved understanding of the issues. They feel they have more control over how they implement competency-based training and assessment, because they have a greater understanding of the possibilities. As Ducker and Klimek suggest:

> We have had to work not simply with assessment in isolation, but we've had to develop a web of relationships between assessment, delivery, learning outcomes, resources, talents, understandings, and expectations of students, staff and administrators. We've had to work through from conception to implementation, experiencing how it works - warts and all. And now we are reflecting on what has happened and how we can do it better next time. (Ducker & Klimek 1994, p16)

The negative aspects that the majority of people noted related to the work-load and commitment required to undertake the research and write up a report. Most teachers said they completely underestimated the time required, whilst others found themselves doubting their ability to complete their projects or, interestingly, complete them to the standard they thought would be necessary. These expectations were generally self-imposed and their concerns were about maintaining academic rigour.

From personal practice to the public domain: Spreading the word

Altrichter, Posch and Somekh (1993) provide seven reasons for ensuring that the outcomes of teachers' research are disseminated and each one has been confirmed by participants in the Project. By opening up the findings of research to the wider community teacher knowledge will not be forgotten; and by going through the process of writing up their work the quality of the teachers' reflection on practice is increased. It also helps them to clarify their own position and have a measure of influence in the development of policy, simply because they have a greater understanding of the particular educational issues. Being offered the first real opportunity to reflect together on practice without condemnation was seen by one researcher as the best feature of her research experience in Project.

Next, Altrichter et al suggest "by making their research knowledge public, teachers can play a more active role in teacher professional development and initial teacher education" (Altricher et al 1993, p178). A number of other teacher-researchers are now introducing their work to new teachers in the Institute's Certificate IV in Tertiary Education and Training and in programs offered through the Institute's Staff Development Calendar. They are also sought out by departments and individual teachers to explain how the findings of their research might be applied in different teaching contexts. There is, therefore, some capacity for generalisability possible from these projects which brings in to question Gay's assertion about the very localised nature of action research.

Ely (1991) supports the view that the purposeful formulation of a body of knowledge through qualitative investigation can validly stand on its own. She states that "...when the results of a person's research can be placed in juxtaposition with those of others, we can make a more complete statement, and possibly a more important one, about the phenomenon we are studying" (Ely 1991, p228).

Altrichter et al go on to say that disseminating research information to the wider educational community reinforces the professional self-confidence of individual researchers and generally enhances the reputation of the profession (Altricher et al pp178-179). Associated with this idea is the concept of accountability. In interview, one supervising teacher involved with a suite of projects in her faculty commentated that the major outcome from the process was that teachers were now much more conscious of their responsibility in and for assessment.

Graduates of the Institute Assessment Project have emphasised their increased sense of self-esteem and professional worth and consider that their profiles have been raised both inside the Institute and out. Enhanced credibility with industry representatives, ITABs, and the like are seen by a number of researchers as a critical bonus emanating from their projects.

Equally significant, the early projects and the occasional papers which generated from them have acted as a considerable catalyst to the development of other research projects. This ripple effect has meant a considerable broadening of interest in sharing in the Institute Assessment Project. Encouraged by the success of others, potential teacher-researchers have stepped forward to become active participants in something which is seen as rewarding, creditable and highly practical.

Conclusion

The Institute Assessment Project is now in its fifth year. At this time, new project proposals are being developed and completed reports are being prepared for dissemination. The work carried out by the teacher-researchers has helped to establish a culture of concern for quality assessment within the Institute. The processes and the outcomes of the projects have also generated a greater sense of confidence in teachers and others that the decisions being made about student performance are both credible and creditable. More importantly, the projects have alerted us, as practitioners, to the areas needing further examination. Validation, more efficient strategies and the extension of flexible assessment options will be required to provide the Institute's clients with the educational and training outcomes they expect. To maintain the Canberra Institute of Technology's quality framework it will continue to be important to nurture and extend the acceptance of the value of critical reflection and personal empowerment that the Institute Assessment project has generated.

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VET policy and research: emerging issues and changing relationships

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The clients of the Victorian vocational education and training (VET) system comprises four groups; industry, enterprises, communities/ regions and individuals (OTFE 1997a). Currently, changes are occurring in the relationships between client groups and the VET system and, importantly, among these client groups. Central among these changes is some departure from the highly centralised and corporatist policy and practice approach to VET which was cultivated during the Dawkins era and which privileged the role of 'industry'(Dawkins 1988). This approach was sustained by the compact between unions and employers under the accord fashioned and secured by previous federal Labor governments. In essence, this was an era of reforms used to support micro-economic reforms to be realised through 'top-down' administrative structures for VET and quests for uniformity, fostered by the belief that such prescriptions were the means to improving the educational outcomes of, encouraging a wider participation in and sponsorship of VET. The role of 'industry' was privileged under these arrangements held to be the collective needs of enterprises in the form of prescriptive national standards. This approach to VET also removed much of the discretion of curriculum developers, teachers and VET institutions (Billett 1995, Jackson 1993, Stevenson 1995). It seems that this was too important to be left to teachers and educational institutions alone.

So, rather than seeking the voluntarism which characterises enterprise commitment to VET in countries such as Switzerland and Germany (OECD 1994a; 1994b), governmental initiatives sought to regulate and legislate this commitment. However, it seems questionable whether commitment can be secured in this way. When the regulatory and legislative frameworks are removed, as is now occurring through a transfer from national industrial awards (which mandated training) to enterprise agreements, much of the previous commitment to VET is not sustained (Callus 1994, Guthrie & Barnett 1996, Misko 1996, Smith 1995). For example, relatively few enterprise agreements contain references to structured training (Guthrie & Barnett 1996). Moreover, there has been a marked decline in the numbers of apprentices being employed in Victoria (STB 1994) and a pattern of sponsorship for entry level training has emerged favouring shorter duration traineeship-type arrangements over the three/four year commitment required for apprenticeships (STB 1995, STB 1997). Even the recent increase in the participation in traineeship arrangements fails to compensate for this reduction.

It seems therefore that key goals of the so-called National Training Reform Agenda have not been realised. Employers have failed to make an increased commitment to training. Nor has there been the kind of transfer of the cost of VET from the public purse to the private sector that was predicted to accompany giving industry the key decision-making role. The failure to secure this sponsorship may explain why government is now seeking sponsorship by individuals for their own vocational development. Consequently, governmental policy in placing the authority for both the quantum and quality of the nation's training effort within 'industry' appears misplaced.

On the one hand this may be because government's regulated and prescribed approach has failed to foster the voluntarism that underpins a mature commitment to VET within the nation's enterprises. On the other hand, it is becoming clear that national prescriptions and core curriculum are unable to address the needs of the differentiated activities of enterprises and communities' needs. The current implementation of the 'book-end' model of curriculum (ANTA 1997) is indicative of a response to earlier concerns about "accreditation and registration at each stage of curriculum leading to excessive regulation." This model therefore furnishes an example of VET policy turning its back on tight prescription and mandating of the centre. Instead it claims to offer pathways in an effort to balance the need to be responsive with that of avoiding duplication of effort at every delivery point (eg workplaces, private providers, TAFE institutes) (ANTA 1997). So it seems that changes to some components of the existing centralist industry-based policies provide evidence of a shift in focus away from a purely 'industry' client focus.

Shifting the focus

With the change of federal government, the collapse of the accord, and the greater focus on enterprise and individual agreements, the linkages between VET provisions and national industrial awards are under challenge. Increasingly, as a product of enterprise bargaining processes, enterprises are making demands of training system which are different than what the industry-based system offers (Catts 1996, Smith et al 1995). The inadequacies of "industry" frameworks are becoming evident as the needs of enterprises are negotiated through enterprise bargaining and also direct interaction with VET providers. This further erodes the idea that highly specific national industry curriculum documents and standards frameworks are likely to be wholly useful or meaningful when applied to particular enterprises (Lundberg 1997). Consequently, within VET, the relationship between 'industry' and enterprises is shifting and being re-negotiated hastened by or precipitated by the demise of bodies with national foci (eg NTB, Standards and Curriculum Council).

Given the increasing irrelevance and dismantling of the national industry frameworks there is now an urgency to determine the needs of enterprises, industry, regions and individuals in a way that provides some balance in their relationship to each other's needs. Such an understanding can be used to identify how best the vocational education system can respond to their needs. Before going further, it is worth briefly defining these client groups, particularly as the first two are often referred to synonymously, when in fact they are quite different.

- *Industry* is defined as the spokespersons for an industry sector, who are usually bi-partite and claim to speak for both the employers and employees within the industry sector. Industry does not directly sponsor training or employ; rather it provides advice and guidance for the sector.
- *Enterprises* are the companies where individuals are employed, where entry-level training is sponsored and fee-for service training can occur.
- *Regions* are areas that have particular combinations of enterprises and communities comprising demographic and other factors that indicate particular vocational education and training needs. The concept of communities has multiple meanings (Lawrence 1997). Here, instead the 'locale' is referred to which has geographic boundaries, and contains within it different groups whose interests, values and perceptions are likely to be different.
- *Individuals* are those who engage or wish to engage with the VET system typically as independent clients of the VET system, and to a lesser degree as enterprise sponsored participants.

This delineation of its clients leads to a consideration of what arrangements can best be aligned to provide for the skilfulness required by enterprises, the requisite base of skills to sustain industries, to address regional needs and provide pathways through which individuals can realise their personal and vocational goals.

Shifting relationships and maintaining balances

Although the focus for policy deliberations and practice is now turning to meet the needs of enterprises in an effort to gain their interest, inherent problems are associated with such a shift. A highly deregulated and enterprise-focused approach to VET may well ignore state and national goals instead favouring adhockery and short termism as is evident in the United Kingdom (Billett 1997b) which is in danger of ignoring the needs and aspirations of the locale and individuals. Enterprises are posited as requiring more direct control of training, than the current arrangements premised on national industry prescription.

Consequently, there needs to be a change in the relationship between enterprises and the VET system as "(C)ooperation between training providers and employers is crucial because supply side competition can only be sustained if demand signals from enterprises and industry are well informed and accurate" (Coopers & Lybrand 1996, p26). They continue, "... the implementation of user choice principles changes the nature of the traditional relationship between employers and training providers... to focus on collaboration in planning, delivery and evaluation, as well as shared responsibility for outcomes... (Coopers & Lybrand 1996, p26). This suggests a shift in the relationships to a more direct interaction between provider and enterprises. Such a shift emphasises a de-centering of decision-making - but it also has the potential to threaten long-term goals for vocational education and those of the national skill levels. Consequently, any shift towards an enterprise focus must guard against losing goals which reflect balance between the needs of client groups, mutuality among clients and the maturity inherent in the existing system.

In advancing enterprises as the sites for determining need and content, the goals and processes which were adopted for a national industry approach founded on regulation and prescription, are now inappropriate (Lundberg 1997). Whereas a centralised approach requires high levels of regulation, an enterprise focus, for instance, will need support and guidance to refine goals and develop relevant curriculum as well as in relating enterprise-specific content to broad national goals. For example, enterprise commitment to training is associated with securing goals which are specific to the particular enterprise (Catts 1996, Smith 1997). Together, these factors suggest that without support and guidance a VET system premised on the needs of enterprises without the mediating needs of other clients may be quite short sighted. Take for example, entry-level VET provisions which traditionally have provided a skill-base for industry and are the kind of structured opportunities which probably furnish the best prospects for the development of robust vocational knowledge. These provisions make important contributions to industry, enterprises and the individuals who undertake them. Yet participation in these provisions is stalling at the very time that efforts are being redoubled to to address the specific enterprise needs (eg Training Packages). While it may be too early to say whether such tailoring on its own terms will be sufficient to encourage wider participation by enterprises, the reduced commitment to VET by enterprises permits a timely glimpse at a VET system premised on the enterprises. Understandably, in a highly competitive and tough market, these enterprises seem to want arrangements which focus on their specific goals as Catts (1996) and Smith (1997) have shown. The difficulty of reconciling the exigencies of enterprise in the sponsorship of entry-level training and desirable strategic goals for levels of participation has probably underpinned the decision by government to support the expansion of the Group Apprenticeship Scheme. However, the key sponsorship of VET appears not to reside within industry.

> Sponsorship of entry-level training is important in developing and maintaining the national skill base (ANTA 1997) and respond the demands of global competitiveness. However, currently enterprise sponsorship comprises a small portion of the overall training profile (14-17% STB 1994, 1997). Moreover, there is evidence that enterprise commitment to apprenticeships has declined 41% since 1990 (see Table 1). The decline in apprentice numbers has been partially offset by increases in traineeship commencements, however the numbers of these shorter term form of entry level training appear to fluctuate over quite short periods of time (see Table 1). The recent high levels of commencements are associated with governmental interventions in the form of support and facilitation (eg NETTFORCE). This trend fails to furnish confidence that the enterprise sponsorship of entry-level training can be relied upon alone to secure the maintenance of the country's skill base in the areas covered by these arrangements. Significantly, the main reason the Victorian training profile is experiencing growth is the increased commitment by individuals which is offsetting the reduced commitment by enterprises (see Table 1). Consequently, it is individuals who are sponsoring themselves through VET provisions who make a major contribution to developing the skill base and who should therefore be brought more to the foreground of policy deliberations.

In contrast to the evidence of a reduced commitment by enterprises, the participation by individual Victorians in Associate Diploma (+154% 1990-1994) and advanced trade (+63% 1990-1994) courses demonstrates their commitment and investment (STB 1995). Full time participation in Associate Diploma courses can be thought of as being entry level, thereby permitting some useful comparisons with apprenticeships and traineeships.

Table 1 Participation in apprenticeship and traineeship programs and Associate Diplomas

Year	Apprentices	Traineeship Commencements	TOTAL ELT	F/T Assoc Dips	All Assoc Dips
1990	16,073	1,492	17,565	-	
1991	8,705	1,004	9,709	4, 790	15,309
1992	7,529	1,845	9,374	5, 156	13,616
1993	9,298	4,295	13, 593	9,216	22,762
1994	10,887	2,477	13,364	13,104	32,036
1995	11,578	1,916	13, 494	13, 237	33,486
1996	10,159	7,205	17,364		

The high levels of participation in Associate Diploma courses can be characterised as these individuals having limited employment options. However, and regardless, these individuals are making a significant social and economic contribution to the nation through their sponsorship to their own vocational development. Referring to New Growth Theory, Chapman (1997) links human capital to economic growth, proposing that human capital is increased by higher levels of education. Consequently, there is a social benefit in the form of an economic growth from an increase in post-compulsory education. Therefore, through this growing participation in higher level VET courses these individuals are making an important contribution at the very time when enterprises are favouring shorter and lower level courses. As is proposed in the next section, there is an enhanced interest in the on individuals to sponsor their own vocational skill development, but they are not generally considered as stakeholders as are industry and enterprises. Ironically, it is individuals who are contributing whereas those who have been given the voice and responsibility for VET are failing to live up to the responsibility invested in them. Not that the decline in enterprise investment is a desirable situation, but again some balance is required in the way that the needs and interests of this group of stakeholders' interests can best be managed.

Emerging focus on individuals

There is an emerging focus on individuals in VET policy, perhaps stimulated by data and analysis such as that presented above. An increased emphasis on the individual has become integral to the VET system in the United Kingdom albeit to promote individual responsibility. Much of this emphasis has been on encouraging individuals' sponsoring of their own vocational development (eg Individual Commitment policy Gibbs & Maguire 1995). What is emerging here and elsewhere (eg European Year of Lifelong Learning) is a view that sees the projection of individuals' development over time as being a key element in securing not only personal goals (which lifelong learning has traditionally been associated with), but also economic goals that will benefit both the enterprises for which they work and the nation. Whether this is a reaction to the narrow skills-based approach to vocational education, a recognition of the need to go beyond industry skills and address a broader goal such as learning to learn remains unclear. However, arising out of this emerging interest is the central role of the individual, not just as an economic unit but as a component of the social and economic development of a country (European Year of Lifelong Learning). Yet, it seems that the concept of lifelong learning has been appropriated to address economic concerns by placing the responsibility upon the individual for their own vocational skill development which is different than some earlier views about lifelong learning which were more associated with personal development goals. So this interest in individuals' contribution needs to be extended from them being considered as a means to securing goals set by other stakeholders to their legitimate inclusion in the development of goals for vocational education systems. So in addition to the transformations taking place in the relationship between industries and enterprises there is also emerging a greater consideration of individuals as an explicit client group of VET.

Regional needs

Region needs have long been the subject of government reports and committees. It has been acknowledged that regional needs, usually those outside the metropolitan centre, are hard to gauge and under-emphasised (ACFEB 1995, KPMG 1996, Schofield 1996). Yet without accounting for the needs of the locale it may be difficult to secure goals associated with the desired levels of participation in and sponsorship of VET. For example, rural employers have been identified as needing more effective consultations with training providers (Market Equity 1997). Equally, success in extending VET provision such as apprenticeships and RPL to the Aboriginal and Torres Strait Islander communities is likely to be premised on the implementation of these initiatives acknowledging and accommodating social and cultural factors in those communities (Woods 1996). This need is illustrated clearly in recent planning documents which indicate diversity in demographic factors across different areas (eg age and ethnicity) (see STB 1995) which have clear implications for vocational education programs.

The ACFE sector, which is owned and managed in the local community, has been recognised as making a significant contribution to the VET provisions in regions (Schofield 1996). Its response to local enterprises' needs as being part of the community, provides a useful model for how these needs can be identified and prioritised. The customisation of training has a local dimension as has been recognised in ACE providers' role. The success of these provisions offer models for the development and implementation of vocational education programs for the 'locale' and its contribution is "...to bring to the national VET system a strongly local flexible, market driven and learner-centred approach to community based delivery" (Schofield 1996, p v).

Efforts to bridge the gap in understanding the needs of enterprises have seen attempts at seeking regional consultations on curriculum and industry training initiatives. Therefore, with the de-centring of VET provisions and the emerging realisation of the importance of engaging situational factors albeit at the enterprise, community or regional level, it is necessary to consider the needs of the locale alongside those of industry, enterprises and individuals. The locality value of the ACE sector is instructional here because "...state and national labour market and training planning is simply not sensitive enough to pick up small scale and localised demand deriving from local circumstances and which may not coincide with state or national training priorities" (Schofield 1996: vii).

The highly autonomous Victorian TAFE institute system with, for example, freedoms associated with administration and curriculum planning, employment conditions etc, indicates a move from the centre. Therefore, it seems that there are changes in the relationships among the VET client groups of industry, enterprises, regions/communities and individuals, which has implications for the further development of the State's VET system in terms of its direction, its mix of policies and emphases within those policies. To realise these needs of these clients, mutuality amongst them, to develop a VET system able to consider and respond to the balance between securing both short term and long terms goals.

Mutuality and a mature VET system

Where maturity in the existing VET system is perhaps most evident is in the long-term strategic relationships that have been established between TAFE institutes and their community and with particular major enterprises. To what degree these particular outcomes are the product of market-based reforms is not clear (Anderson, 1997). However, these examples of mutuality and maturity are models for further development, with increased autonomy to institutes and support for other providers to develop similar relationships. Equally, measures which seek to nurture the training system rather than reform it by external means are worthy of consideration. Performance measures for TAFE staff and administrators can be used to monitor performance towards agreed goals. However, such accountability can only be fairly operated in a framework that grants greater professional discretion to teachers and administrators. Moreover, at this time, the key commitment to and investment in developing social and economic goals through

VET is being exercised principally by individual Victorians' commitment to higher levels of entry level and professional development options. This commitment needs to be nurtured.

The links established between providers and enterprises might again focus the mutual benefit of these relationships in particularly rich ways. Teachers in VET should be included in these arrangements, their contributions respected and rewarded, not just viewed as implementers and 'the problem' within VET. Clearly, the waves of external reforms and their regulated and legislated form have also failed to capture the enthusiasm and interest of enterprises. In fact, quite the opposite has happened. New ways, such as those referred to above might need to be considered to recapture the commitment of enterprises and especially capture the interest of small enterprises. So mutuality of interest is more appropriate perhaps for the next decade rather than the external mandating and regulation which have served the VET system so poorly in the past.

Conclusion: Changing relationships and roles for client groups

To conclude, from the above, changing relationships are proposed among the VET client groups as are emerging roles. Mutuality among the interests of these groups is also sought. In this concluding section, each of these groups is discussed.

Industry. The role of 'industry' should move one of mediating the more specific demands of enterprises and the demands for curriculum emerging from regional deliberations. This role needs to be enacted to maximise the prospect of transfer to other enterprises within the industry and, simultaneously, will limit the problems inherent in state-based or enterprise specific arrangements. This role for also offers a way of representing individuals' aspirations for career goals being realised through arrangements which might otherwise be wholly enterprise, college or regionally-focused. Industry will realise its legitimate influence through goal statements for courses and recommended content through such mechanisms such as Training Frameworks and National Training Packages. Its role includes the complex task of planning and presenting pathways that reflect enterprise needs and individuals' aspirations. So the industry role should include encouraging relationships between providers and enterprises in securing industry goals which in turn also have consequences for individuals. Little is known about the pathways which individuals within industry take. However, not all workers enjoy the kinds of articulation that are articulated in the Metals model (apprentice - tradesperson - advanced tradesperson - para-professional). It should be a priority for industry to discern the nature of pathways that workers take in their industries and attempt to facilitate pathways across their industry and also others.

Table 2 - Changing roles and emerging curriculum foci

Clients' changing role	**Emerging foci for curriculum**
Individuals: From individuals as economic units to individuals as aspirants with personal and professional goals	arrangements for individual aspirations which have both industry and enterprise dimensions. Pathways for individuals and a focus on careers.
Enterprise: From a fittedness with 'industry' mandating and regulation to acknowledging a fittedness with their own unique requirements within an industry framework.	having training needs identified and realised by local providers - strategic alliances between local enterprises and providers - development of curriculum arrangements (goals, processes, etc. established at local level). Broadly-stated industry goals transformed at the particular enterprise to develop more specific outcomes.
Regions: From national and state-based priorities to negotiated regional priorities.	greater regional planning and reaction-based arrangement - undertaken in conjunction with local training providers (eg TAFE Institutes). Responsiveness to changing demands at the regional level. Accreditation processes localised -

	focusing on processes of learning as much as infrastructure requirements and pre-specified outcomes)
Industry: From centralised prescription, mandating and control to facilitating individual, regional, state and national industry aspirations.	responsibility for the provisions of broad curriculum goals which are relevant for the industry, but not so prescriptive that enterprise or regional needs are required. Maintaining career pathways for industry aspirants. Developing and promoting the industry profile.

Industry's role therefore moves from prescriptive measures to mediating the specific needs of enterprises and provider programs, maintaining the industry's base of skills and permitting the pathways of individual career development. What is being suggested is a more 'bottom-up' as opposed to the 'top down' approach that has characterised VET provisions in recent years. Consequently, the use of highly specific industry based outcomes are likely to be redundant, as outcomes of this kind need to be negotiated at the enterprise/community or institution level. This change also removes the need for an instruction and assessment approach that is premised on such accountability - ie CBT.

Enterprises. Decision-making within enterprises determines how and in what ways employers sponsor participation in, and fund VET programs. Moreover, enterprises are unique organisations with idiosyncratic needs and requirements. A curriculum foci for enterprises needs to develop a firmer understanding of what influences participation. For example, when the data on enterprise commitment to training is compared to current policy prescriptions, such as user choice, a mismatch is evident. It seems that enterprises want support and facilitation - not more choice or options (Billett & Cooper1997). Consequently, the focus for curriculum and resource decision-making should necessarily shift to determine in which ways these needs can be addressed. Mechanisms that are responsive to enterprise needs within an industry framework, are needed more than those which are reactive to an industry-based framework based on national prescriptions.

So, rather than being directives between 'industry' and enterprises, more direct and purposeful relationships may be developed including those between providers and particular enterprises. The recent decline in participation in apprenticeships remains a key issue for government goals for VET even when offset by increased participation in traineeship type programs of considerably shorter duration. Mutuality in relationships between industry and enterprises may assist securing enterprise commitment to these provisions and mediate the entry-level course development to maximise portability within the industry. Thus, the emerging focus for enterprises is from fittedness within industry prescription to arrangements which address enterprise needs to be accommodated within industry frameworks, from bottom up to top-down (eg goals determined at the industry level and objectives negotiated at enterprise or college level).

Individuals. An emphasis on individuals, their commitments, and their needs is emerging as an area where transformation is needed in VET policy and practice. Individuals are making significant contributions to and investment in programs that have a particular vocational outcome as a key intent. From a review of the literature (Billett et al., 1997), the roles and needs of individuals in the provision of VET can be seen to have a number of dimensions: (i) they will need to have skilful knowledge required by enterprises while also being required to work in the industry of their choice; (ii) individuals' needs are not restricted to those of younger learners or those concerned with initial entry to the occupation, but rather with provisions to do with lifelong learning; (iii) individuals are demanding high levels of outcomes associated with a career not just a job. The erosion of direct influence on VET by industrial relations practice - with its strong workplace focus has embedded VET in contested terrain. So changing from submission to the needs of industry to active participants and legitimate stakeholders in the curriculum development, individuals goals and aspirations need to be incorporated within VET decision-making.

Regions. Problems with centralised curriculum and administration have the potential to lead to the needs of the locale being misunderstood or assumptions that what is appropriate for national administration has purposeful application in regions/communities. Equally, educational needs, demographic factors, local enterprises needs, distance, existing resources, etc. are all factors which influence the provision of vocational education and which need to be accounted for and understood at the regional level.

In sum, it is proposed that these changing relationships and emerging roles provide

a basis to realise wider participation and sponsorship in VET in ways that address the needs of industry, enterprises, individuals and regions.

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Learning, workplaces and public policy

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As has occurred in much of the developed world, Australia has engaged in a major attempt at social re-engineering over the last decade. This process has focused on significant and fundamental shifts in the way we understand and organise those areas of education that are meant to have vocational relevance.

From its initial days, and still in present times, very little of the policy development has been based upon any existing body of knowledge. Rather it has seen itself as a visionary quantum leap which subsequent research would endorse. Throughout much of this period, an all-consuming sense of urgency has driven change ever onward. Many significant policy inventions have been superseded even before practitioners were aware they existed at all.

One of the strongest and most compelling of the rhetorical bases which have driven change has been the belief that the systems of vocational education common in the 1980s and earlier had failed to develop the skilled and flexible workforce Australia urgently required . Proponents of this view largely believe that the primary reason for this failure was the control of the system by educators who had little or no experience of 'the real world'. John Dawkins, for example, in initiating the major reform process said

> Lasting improvements in the quality of Australia's workforce skills will require major changes in the quality and flexibility of our national training arrangements. ...
>
> Deficiencies in the quality and flexibility of training in Australia have been the subject of numerous government reports and inquiries over the past thirty years [however] vested interests have outweighed cogent arguments even for short-term refinements.
>
> (Dawkins 1989, p.8)

The corollary that followed for many was that the control of educators had to be broken and transferred to the workplace. The major employer body, the Australian Chamber of Commerce and Industry (ACCI), made their position clear in their guide to CBT for employers:

> ... often what was taught depended on the teacher - what the teacher thought they should know, or even what the teacher liked to teach. In CBT ... industry bodies ... will say: what people need to do in jobs; what they need to know to do the job ... (Australian Chamber of Commerce and Industry 1993, p.9)

A distinct but complementary set of beliefs has also played a powerful role in shaping our current arrangements. This set of beliefs focused on the very nature of vocational competence. They held that competence involved a great deal more than simply the capacity to 'know about', it required the ability to actually carry out real world activities - to 'walk the talk'. In that same guide, ACCI noted 'the trouble was that the courses often concentrated on what people learned, rather than what they could do' (Australian Chamber of Commerce and Industry 1993, p.9).

The corollary that followed for many was that such skills and knowledge could only be demonstrated—many would argue can only be learnt—in the workplace. As early as 1990, recommendations were urging that 'there is a need for the expansion and further development of enterprise based training infrastructure' (Commonwealth/State Advisory Committee (COSTAC) 1990, p.57) .

A third driving force leading in a similar direction was the concern of governments that the cost of running their VET systems was growing rapidly. They wanted to expand the amount of quality, recognised training but didn't want to have to foot the bill. For example, Dawkins noted that 'there is likely to be an increase in demand for vocational education and training … of at least forty per cent' (Dawkins 1990, p.276). By encouraging the growth of recognised training in workplaces, governments could achieve two significant policy objectives in one package.

All of these, then, have led to significant components of policy and procedural documents and to substantial changes in practice that emphasise the role of the workplace as a site for quality, recognised training.

However, all of this change has taken place without a clear understanding of how workplaces operate; without knowledge of how learning occurs in workplaces; and without knowledge of whether or not workplaces have the capacity to assume this role or any interest in doing so.

In this paper I draw on the experience of four recent projects in which I've been involved to examine evidence that illuminates these issues. Finally I'll argue that Australian policy has misunderstood the nature of learning at work and its relationship to formal systems of education.

Four research projects

Over the last year or so, four projects—each concerned with a very distinct issue—have helped me to focus my thinking on these matters.

The first of these is the project reported earlier in this conference (Selby Smith, Hawke, McDonald and Selby Smith, 1997) which sought to consider the impact of VET research on policy and practice in Australia. A part of my work for that project involved collecting as much Australian research as we could locate. The absence in that research collection of any significant focus on the workplace before the late 1990s was extremely notable and I'll return to this and other findings from that research in a moment.

The second piece of research concerned the introduction of Training Packages (Moy and Hawke 1997) and sought to explore the implications of their introduction for quality provision. That research highlighted the gap between the reality of many workplaces and the implementation of policy.

The third has been a series of small projects led by Laurie Field that have been looking at the nature of learning in small enterprises (Field 1997). These form part of an ongoing research program concerned with these issues within the Centre. This research has highlighted the existence of a considerable body of knowledge—much of it from international sources but quite a deal of Australian work—which raises real questions about the soundness of current policy as it relates to the small business sector.

Finally, a piece of research and consultancy for the NSW Department that is providing advice on the principles that should apply to funding the delivery of nationally recognised qualifications in the workplace (Hawke, Mawer, Connole and Solomon 1998).

What the research found

Only some 8% of the research studies identified involved research in workplace sites and almost two-thirds of those had occurred only since 1992. Thus the major decisions that had been taken by VEETAC and MOVEET—the key national policy-making bodies of the time—had almost no Australian research to draw on which addressed key issues about learning in the workplace. More importantly, however, the Australian research on workplaces that was available in the late 1980s and early 1990s was only being circulated within academic communities and was almost certainly unknown to policy-makers.

Of the later research that involved learning in the workplace, the overwhelming majority were 'evaluations' which reported and described programs that were felt to demonstrate some aspect of 'good practice'. Only since around 1994 has there been any significant research effort directed towards critical analysis of the workplace as a site of learning.

Given that learning in the workplace has been a central focus of national policy since the early 1990s, this at first seems surprising. However, the explanation suggested by other parts of the data collected for this study suggest a prosaic cause—funding.

Looking at the pattern of emphasis in the issues addressed by research over the nine years studied, there is a strong suggestion that 'hot topics' for research follow major policy and practice developments with about a 1-2 year lag. Moreover, public funding in one form or another is the overwhelming source of support for Australian VET research. Throughout this period, the nature of that funding consistently shifted from a situation in which public agencies funded their own internal research groups to one in which public agencies commissioned research from external organisations. Thus, over that decade, the focus of research activity has increasingly been shaped by public agencies selecting the research they wished to fund.

In this project we also looked at the use decision-makers make of research. A significant but unanticipated outcome of this was the extraordinarily high turnover that has occurred amongst middle- and senior-level decision-makers in the last five years. Over two-thirds of those contacted had only taken up their position in the last five years and almost half had come from outside VET entirely. Even amongst those with VET experience, a significant number had had limited contact with direct delivery of training and were primarily involved in administrative or similar roles.

Neither research-based knowledge nor generic, discipline-based knowledge of education and training issues formed a large part of these decision-makers' awareness. Rather they relied on 'common knowledge', advice from others—the origins of which they rarely knew—or gathered information on current knowledge in the field from magazines such as *Australian Training*. Such non-specific knowledge was most often the basis of their decisions or actions because they simply didn't have the time to seek a deeper or more complete understanding of most issues.

This issue of increasingly constrained timeframes for action was also a major theme of our research on Training Packages. Almost none of the people involved in their development felt that there had been adequate time allowed for full and proper consultation on any aspect of the process. However, workplaces—one of the principal clients for whom Training Packages have been developed—were found to have the lowest level of awareness or involvement. Indeed even industry organisations commonly reported that they had not even seen any of the material in Training Packages that had been endorsed by the National Training Framework Committee.

Providers—both public and private—were concerned that the Training Packages that were approved or in final stages of development would not provide any improvement in the situation of workplaces that wanted to provide training for their employees.

Indeed it was a common issue raised by employers and providers alike that employers were only just coming to accept and understand the value of the curriculum documentation that they had been required to utilise. Many employers were confused by a policy position which had promoted national curriculum as 'the answer' one minute and which denigrated it as 'too rigid' the next.

Laurie Field's work has shown quite comprehensively that formal, structured training is simply not the answer to the learning needs of a very great range of small enterprises. For many small enterprises, the amount of learning that employees require is quite limited for a range of reasons. These include that the nature of the firm's work is highly static—little change occurs and so little new learning is involved. In other cases, the firms introduce new ideas by employing staff who've worked in other contexts and they apply that new knowledge directly. It may diffuse to other employees, but this is not essential for the firm.

For other firms, however, new learning is always required. But even here, training may not be the answer. Sales representatives and accountants represent significant sources of new knowledge and new techniques for many small firms. The learning that occurs is informal, arises out of normal on-going activities and is specific to an immediate need.

For yet others, formal, structured training provides an effective and efficient means of introducing new knowledge and skills.

However, even within one firm, their needs for new learning vary greatly over time and are dependent on their operating environment. In periods of high staff turnover, for example, training might be more appropriate than at other times when staffing is stable. A significant technological innovation within an industry sector might suggest a training solution, but slow, evolutionary change may best suit a learning strategy that involves job rotation.

Small businesses are not all the same: a reality often overlooked in government policies. Indeed this research is trying to identify some of the key dimensions of difference that indicate which learning strategies are most often used and which are most appropriate.

Moreover, these lessons from small businesses are likely to hold considerable relevance to large businesses as well. A number of studies including some of our own (eg Hayton, McIntyre, Sweet and McDonald 1996) have shown that, as large firms increasingly organise themselves into semi-autonomous cost-centres, these separate entities operate more like small enterprises than they do large ones.

The variety of features that characterise small businesses was also found to be significant in the most recent study that looked at funding workplace learning. The NSW Department was seeking a simple and effective set of guidelines that would underpin its funding arrangements. However, the great diversity of needs among workplaces indicated that simple solutions were unlikely to be appropriate.

The research involved interviews with employers, trainers, training providers and trainees. In each case, those interviewed were involved in the delivery of nationally recognised qualifications within workplaces. However, even what the participants understood as 'a workplace' varied enormously. In one case the enterprise-based RTO operated throughout NSW and needed to bring its trainees together in a central location for parts of its program. Others met the more traditional notion of a single geographic location but were sufficiently specialised that they were only able to contribute to developing part of a more broadly-defined set of competencies.

These differences are crucial to our understanding of 'workplace learning' and the role of workplaces in a broader policy agenda.

While all of the workplaces in our study were committed to providing a quality outcome for their trainees, what that meant to them varied widely. For many, their interest lay solely in developing the specific skills required within their own organisation. In some industry sectors where a tradition of apprenticeship existed, they also saw themselves as having a moral commitment to preserving the standards of the 'trade' but this did not always translate into their having a financial commitment to doing so.

In areas, however, where the tradition of apprenticeship did not exist, there was little evidence of a sense of public responsibility to provide generic skills transferable beyond the workplace or skills which, while part of the overall occupational package, were not used within the firm. The existence of public funding to support the program was often their only reason for involvement.

A significant number of firms who were providing workplace learning did not have staff who were trained as trainers at even the most rudimentary level. In one industry area, this was dismissed as 'unnecessary, any tradesman can do it'. In another, the industry body coordinating the program across a range of quite small firms was concerned at the quality of on-the-job instruction that was being provided. However, none of the firms had any interest in acquiring training skills nor did they see it as financially viable.

In that same program, the industry body had also become aware of the poor quality of the facilities in many of their firms and the fact that bad—and even dangerous—practices were being demonstrated to trainees as part of their learning.

Moreover, many of the workplaces involved had become highly specialised in either the processes they utilised or the products or services they provided. Where trainees are employed by a Group Scheme this need not be a significant problem. However, we observed a number of cases in which employers were unwilling to participate in job rotation arrangements because of the loss of productivity they would experience.

The firms and industry organisations we studied took a strong position that training programs needed to reflect their needs rather than enterprises adapting their own operational arrangements to fit the demands of training programs. Many were prepared to make some adjustments but there were significant limits on how far they were prepared to go. This manifested itself in a number of ways. Some organisations indicated that they were reconsidering their involvement in these nationally recognised qualifications because the constraints were greater than they could accept. Others were prepared to live within the constraints for a while at least. Others dealt with the limitations by ignoring them.

Conclusion

So what does all this suggest? Firstly it indicates clearly that we are operating in a domain in which complexity and variability is the dominant feature. It is not the simple policy issue which appears to be assumed by most current policy processes.

Workplaces vary greatly on a range of features which are important when we need to consider what role — if any — they should play in the development and delivery of formal programs of training. Among these key features are the following:

- the extent to which learning is valued and rewarded within the enterprise
- the role of knowledge in setting the competitive climate for the enterprise
- the size of the enterprise or worksite
- the range of products, processes or services provided by the workplace
- the capacity and willingness of the workplace to cooperate with related organisations

Secondly, many workplaces are not clear about what role they want to play in the delivery of nationally recognised qualifications and are equally unclear about what they can properly expect to obtain from any involvement. Most of those we've dealt with have become involved through what are, in essence, marketing campaigns. The reality has been very different and their disappointment has fuelled a cynicism and uncertainty which will have long-term consequences.

Finally, policy-makers are unclear about what they want workplaces to do. Throughout the last five years, descriptions of the role of workplaces within the overall VET system have varied widely. Their role has shifted from providing advice and direction, to leadership, to provision of workplace experience, to full responsibility for provision, to quality assurance.

We've still no clear understanding about how learning occurs in workplaces or what workplaces might, in time, be capable of providing. We need to more clearly understand the nature of the core business of workplaces before we — as Terri Seddon so aptly put it during the conference — create another 'policy pudding.'

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Recognition of informal learning: challenges and issues

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The 1990s in many countries have been a time of unprecedented interest in vocational education and training (VET) by both policy makers and the research community. This paper deals with a topic that has many facets of concern for both policy makers and researchers, as well as VET practitioners in general. This topic is the recognition of informal learning. Its complexity will become clear from the various sub-topics that comprise the sections of this paper.

Before focussing directly on the recognition of informal learning, a few remarks about the level of interest in VET are needed. These remarks will provide a context for some of the issues about recognition that are discussed later in the paper. In Australia, at least, the unprecedented interest in VET has been largely a creation of politicians and policy makers, with VET practitioners being required to change their practices in radical ways as policy implementation has proceeded rapidly. The interest of researchers followed naturally from these developments as research funding became increasingly available to study various aspects of the changing VET sector. In my view, this major focus on VET has drawn a sterile response from many in the broad educational research community. By bandying around topical labels such as 'economic rationalism', 'corporate managerialism', 'the new vocationalism', the debate has remained at a level which requires no real engagement with the workplace changes. The avalanche of these generalist critiques has made it clear that there is a widespread hankering for a return to the 'golden past' when educators were free to go about their business with little government interference. However, these critiques offer little constructive understanding of the changing workplace.

In fact, the so-called 'golden past' was one in which VET was misrepresented and neglected by the dominant 'grand narratives' about the nature of education. While I have some reservations about recent changes in education, I also believe that the chances have never been better for recognising the importance of vocational education in the educational enterprise as a whole.

Recognition of learning

Because there are various sub-issues around the topic of recognition, I was interested in the derivation of the word 'recognition'. According to the *Concise Oxford Dictionary*, it has two main meanings:

recognition (L. *recognitio*) -

> 1. acknowledge validity, genuineness, existence of, etc
> 2. knowing again, identifying as known before.

The first of these meanings is the prime one. The second one brings in 'knowing' which will loom large in the issues that will be discussed in this paper. The 'knowing' that is important in educational thought is carefully distinguished from emotion and volition in the term 'cognition,' a close relative of 'recognition':

cognition (L. *cognitio*) -

> action or faculty of knowing, perceiving, conceiving, as opposed to emotion and volition; a perception, sensation, notion or intuition.

It will be argued that education suffers from '*cognitio* dominance', specifically by quarantining cognition from emotion and will. From the Greeks we have inherited the notion that ideal knowledge is represented by universal necessary truth, i.e. truth that is purged of emotional or practical considerations.

In this paper, four types of recognition will be discussed. They include formal recognition, as well as recognition more generally. They are recognition:

- of informal learning as credit towards formal qualifications
- by the educational establishment that other knowledge is valuable
- by the learner that learning that has occurred, i.e. self-recognition of the tacit
- of the role of the many relevant contextual factors

The first two are current issues but are dominated by assumptions about *cognitio.* These two are considered in some detail in following sections. The second two are largely overlooked due to assumptions about *cognitio.* These two are considered somewhat more briefly towards the end of the paper. I will raise important issues, but not give final answers, since much work remains to be done on each of these issues.

Recognition of informal learning as credit towards formal qualifications

I will contrast recognition of informal learning as credit towards formal qualifications with two other cases of recognition, viz formal off-the-job education/training and formal on-the-job training. I will use the Australian term "recognition of prior learning (RPL)" throughout this paper. While the terms used in other countries differ, the concepts and issues are similar. RPL involves something different in each of the three cases:

- *Off-the-job education/training* (normally formal classroom learning) Here RPL is well known and established. It is usually called 'credit transfer' and involves matching content and levels of subjects completed by candidates in other courses.
- *Formal on-the-job training* Here RPL has become established. It involves candidates showing that they have achieved specific learning outcomes (or perhaps demonstrating that they meet competency standards).
- *Informal workplace learning* Here RPL by educational institutions is more difficult, but not impossible (e.g. honorary degrees). The basic problem is to identify what it is that the candidate has learnt that can be matched with course content/structure.

Thus, for informal workplace learning, 'recognition of prior learning' is at once more easy and more difficult. It is easier where overall recognition in the particular occupation is concerned. For example, suppose someone has become a very successful tailor without any formal training. Recognition of their standing as a tailor is relatively straightforward - they have samples of their work, testimony of customers and other tailors, etc. On this basis, they would likely be admitted to (say) an advanced course in tailoring, even though they lacked formal qualifications.

But suppose they apply for admission to a Diploma in Costume Design and Fabrication with exemptions based on their work knowledge and experience? Here matters are tricky. There may be some skill components for which recognition is fairly easy. But it will be the underpinning knowledge and understanding acquired in the practice of tailoring, much of it tacit, which will not readily match up against the content of the Diploma course. One of the problems here is that the-know how gained by informal workplace learning is not strictly equivalent to any course content. As experience of competency-based courses in Australia has shown, formal courses cannot turn out fully competent graduates precisely because this know-how can only be gained, apparently, from actual workplace experience. Another problem is that the nature of this know-how is not well understood anyway (Hager 1996b).

Davison (1997) notes that universities currently use the notion of equivalence as a criterion for judging the educational value of informal workplace learning. He argues that decisions about equivalence between informal workplace learning and formal course content/structure will depend on purpose, and, inevitably, staff involved will have varied views on the purpose of RPL. He notes further that 'equivalence' itself is not objective: "Even 'equivalence' as same result or consequence will be bound up with levels of interest in, and valuations of, the result or consequences. In other words, questions and answers of meaning are immersed in site-specific politics and purposes, inextricable from other personal assumptions, beliefs and motives" (Davison 1997, pp2-3).

Davison goes on to develop a plausible link with Foucault's work:

> Both the translation and interpretation are bounded by how far the results stand a chance of being accepted by the university and its representatives who have some interest in RPL and its consequences. RPL is a specific and concrete example of Foucault's 'power/knowledge'. The naming of the applicant's experience, the interpretation of specific academic requirements and any final judgements of equivalence (including lack of) can not be understood independent of the respective power possessed by all those involved and the workplace politics of each unique site where such power gets expressed. (Davison 1997, p8)

Put more simply, perhaps, two strictly incomparable things are being compared, so a range of other extraneous factors will inevitably shape the outcome.

The ubiquitous 'front-end' model makes assumptions that confuse our thinking. (The 'front-end' model sees the course as providing all that a practitioner needs to *know* in order to practice). On this model, RPL simply consists in ascertaining what, if any, parts of the course candidates already know and then requiring them to take the remaining parts of the course. An alternative model, the 'lifelong education' model, sees the course as merely preparing candidates for the early stages of practice. On this model, RPL focuses on a different issue, viz what parts, if any, of the initial course do these experienced people need? And what other things not in the initial course do they need? Obviously, there are a number of research questions here. Notice that the lifelong education model, unlike the front-end model, is not *cognitio* dominated.

Recognition by the educational establishment that other knowledge is valuable

Informal learning of all kinds has had a low status in educational thought and practice. For convenience, in this section the focus is now narrowed to a major case of informal learning, viz workplace learning. An important obstacle to workplace learning being taken seriously as part of someone's education is its difference on many criteria from traditional 'educational' activities. This is most obvious in the vast differences between workplace learning and typical learning in educational institutions, but workplace learning is also very different from on-the-job training.

Differences between workplace learning and formal learning

1. Teachers/trainers are in control in both formal learning in educational institutions and in on-the-job training, whereas the learner is in control (if anyone is) in workplace learning. That is, formal learning is intentional, but workplace learning is often unintentional.
2. Learning in formal education and in on-the-job training is prescribed by formal curriculum, competency standards, learning outcomes, etc. Workplace learning has no formal curriculum or prescribed outcomes.
3. In both educational institutions and on-the-job training, learning outcomes are largely predictable. Workplace learning outcomes are much less predictable.
4. In both educational institutions and on-the-job training, learning is largely explicit (the learner is expected to be able to articulate what has been learnt, e.g. in a written examination or in answer to teacher questioning; trainees are required to perform appropriate activities as a result of their training). Workplace learning is often implicit or tacit (learners are commonly unaware of the extent of their learning).

5. In formal classrooms and in on-the-job training the emphasis is on teaching/training and on the content and structure of what is taught/trained (largely as a consequence of 1-4). In workplace learning, the emphasis is on the experiences of the learner-as-worker: not a concept to be taken lightly, given the power of self-directed learning in making sense of one's workplace as well as one's own life at work.
6. Formal classroom learning and on-the-job training usually focus on individual learning. Workplace learning is more often collaborative and/or collegial, despite the current policy and rhetorical emphasis on self-direction and individual experience, noted in point 5. This sociality occurs because workplaces are by definition socio-culturally located, and their consequently shared and site-specific experiences collectively available for educative purposes. Thus workers invest much of their personal identities in work, and find these defined and re-defined by the local work culture - by 'the way we do things here'.
7. Learning in formal classrooms is uncontextualised, ie it emphasises general principles rather than their specific applications. While on-the-job training is typically somewhat contextualised, even here the general is emphasised, eg training for general industry standards. But, workplace learning is by its nature highly contextualised, as outlined in point 6, and must include emotive, cognitive and social dimensions of workers' experiences in advancing their learning.
8. Learning in formal education and in on-the-job training is seen typically in terms of theory (or knowledge) and practice (application of theory and knowledge). Workplace learning, though, seems to be appropriately viewed as seamless know-how, in the Aristotelian sense of *'phronesis'* or practical wisdom.
9. In educational institutions and in on-the-job training, learning knowledge typically is viewed as more difficult than learning skills (thus more teaching effort is usually invested usually in the first than the second). Workplace learning, as the development of competence or capability via a suitably structured sequence of experience, does not operate with the knowledge/skills distinction.

The educational significance of these differences

Given 1-9, it is hardly surprising that formal learning/education is valued much more than informal learning (including workplace learning). Workplace learning is a paradigm case of informal education which is undervalued by all levels in the formal education system. Historically, training has been viewed as the antithesis of education. Training as mindless, mechanical, routine activity has been contrasted with education as development of mind via completion of intellectually challenging tasks (Winch, 1995). Despite this 'chalk and cheese' conception of education and training, 1-9 above show that they have more in common with one another than either has with workplace learning. No wonder, then, that for many involved in education the idea of workplace learning as genuine education is beyond the pale. If claims that workplace learning is educational are correct, then we need a re-conceptualisation of education. However a brief account of some the main issues and debates, together with a proposal for advancing thinking on these issues, follows.

A major reason why traditional ideas on education have failed to take account of the significance of workplace learning is a flawed view of the nature of knowledge. According to the received 'grand narrative' of education derived from Plato and Aristotle, theoretical knowledge is superior to both practical and productive knowledge. For Aristotle, theoretical knowledge was linked "to certainty, because its object was said to be what is always or for most part the case" (Hickman 1990, p107). According to Aristotle it thereby had a share in the divine. He held that practical knowledge was inferior to theoretical knowledge because it involved "choice among relative goods" (Hickman 1990, pp107-8) and productive knowledge was even more inferior because it involved "the making of things out of contingent matter" (Hickman 1990 p108). For the Greeks this hierarchy of theory/practice/production was not only epistemological, but also social in that a person's place in the city state reflected the kind of knowledge that was their daily concern.

This epistemology creates problems of several kinds due to its impoverished notions of knowledge. It ensures that *cognitio* is quarantined from emotion and will. It also leads to the prevalence of theory/practice thinking, preventing consideration of types of knowledge peculiar to the workplace. If workplace practice merely involves the application of general theories (the province of education) to the successful solution of particular problems of individual workplaces, then the details of the workplace problems remain of little interest to education.

However, various writers, most notably Schön (1983), have drawn attention to the inadequacy of the theory/practice account of workplace practice. This account is based on what Schön calls "technical rationality", ie the view that practitioners need to command a body of disciplinary knowledge, mostly scientific, which they draw upon to analyse and solve the various problems that they encounter in their daily practice. Schön pointed out that this approach does not fit what is known about actual workplace practice. For one thing, it is typical of real life practice that ready-made problems do not present themselves to the practitioner. Practitioners must identify the problems in a given set of circumstances. Thus, according to Schön, dividing theory from practice has created an intractable problem of bringing them together again when accounting for human action.

The failure of theory/practice ways of conceptualising the problem has generated a host of attempts in more recent work to bypass this dichotomous approach. These range from Schön's 'reflective practitioner' to problem-based learning. The impact of this thinking has been very widespread. Even in cognitive psychology there is a recognition of the need to "de-emphasise the spurious theory-and-practice connotations" that surround the declarative knowledge/procedural knowledge and similar distinctions because "they do not necessarily represent independent modes of functioning" (Yates & Chandler 1991, pp133-134).

Schön's alternative epistemology of professional practice centres on the "reflective practitioner" who exhibits "knowing-in-action" and "reflecting-in-action". Knowing-in-action is tacit knowledge in that though practitioners know it, they cannot express it. Thus it is akin to Polanyi's (1958) "personal knowledge" which refers to the know-how displayed in skilful performances which follows a set of rules not known to the performer. According to Schön, knowing-in-action is underpinned by "reflecting-in-action" or "reflecting-in-practice". Practitioners in "notice", "see" or "feel" features of their actions and learn by consciously or unconsciously altering their practice for the better.

Schön's proposals have been influential in many arenas of professional education, not least in teacher education. However there have been criticisms of his work and its influence. One is that it is clearer what Schön is against than what he is for. His proposal for "reflecting-in-action" has been seen as vague. Gilroy (1993) challenges it on general epistemological grounds. Beckett (1996) goes further and questions the existence of "reflecting-in-action", particularly in professions with "hot" action, ie where the "pressure for action is immediate" (Eraut 1985, p128). This includes much of the work of teachers, surgeons, lawyers, nurses, etc. By contrast the work of a lawyer preparing a brief, an architect developing a design, or a doctor in a consulting room is much "cooler". As these examples make clear, Schön's theory is still too solely reliant on *cognitio*. In "hot" action situations there is no time for reflection, yet the practitioner usually 'knows how to go on'. It is more a case here of 'what practitioners find themselves doing', something that seems as much affective and volitional as cognitive. Beckett argues for "anticipative action" as explaining these cases, though accepting that this too has difficulties.

At a more fundamental level, the host of recent attempts to bypass the theory/practice problem has meant questioning of the nature of education, and the nature of knowledge itself. As well, with the shift in attention to professional knowledge and its differences from disciplinary knowledge, there has been a growing interest in the sources of such knowledge. This has in turn raised fundamental questions about the nature of research. However, since none of these attempts to avoid the dichotomous theory/practice approach has yet gained widespread support, I will here outline briefly a promising alternative approach.

The problem is that there are far too many variables for researchers investigating workplace learning. We need a way of conceptualising workplace learning that draws attention to main features of the phenomenon, while being sensitive to the potential contributions of the many variables that have been shown to influence workplace learning. The proposal is to concentrate on a central activity of people learning in the workplace, viz making judgements. It is hypothesised that making judgements represents a paradigm case of workplace learning. A growth in such learning represents an increasing capacity to make appropriate judgments in the changing, and often unique, circumstances that occur in many workplaces.

Of course, the extent to which workers make judgements during the course of their work depends, amongst other things, on the way that the work is structured and organised. An assembly line is organised so that workers exercise minimal judgement, so there will be little or no workplace learning. The much discussed learning organisation maximises judgement, and, hence, learning. Most jobs fall somewhere between these two extremes. It is argued further that by theorising workplace learning in terms of what people actually do (make judgements), we can account for the many variables influencing workplace learning via their influence on such judgements. It turns out that the many variables that influence workplace learning are just the kinds of factors that are taken into account when judgements are made.

An account of workplace learning via judgements has been developed in previous work (Hager 1996a). This account is broadly congruent with Dewey's hitherto neglected logic (Burke 1994) and its theory of judgements. Traditionally, logic was concerned centrally with universal propositions, which were also the mark of the highest forms of knowledge. In this scheme, judgements were also propositions. In this approach, workplace learning is of little interest, since, at best, its particularities are but distantly connected to the ideal of universal knowledge. Thus the problem becomes one of accounting for how practice is connected to theory. As already discussed, theory/practice accounts of workplace judgements have repeatedly failed.

Dewey's logic of action, however, repudiates the theory/practice dichotomy (and cognate dichotomies such as discursive vs practical). It also distinguishes propositions from judgements and features a much more sophisticated account of the kinds and characteristics of propositions that are relevant to knowledge. This Deweyan account firstly argues that the universal/particular distinction is not the same as the generic/specific distinction. Dewey then identifies seven sorts of propositions, only one of which is particular and two of which are universal. The other four share characteristics of both the particular and the universal. However, in terms of the generic/specific distinction, three of the seven sorts of propositions are specific and four are general. Dewey further provides an account of the role of these sorts of propositions in judgements. Thus Dewey's logic, at least points beyond the simple binary thinking inspired by the Greeks. According to my account of workplace learning via judgements, all types of Deweyan propositions are potentially relevant to workplace judgements.

With the development of artificial intelligence, robotics, etc. the field of logic is finally turning its attention to the logic of action and Dewey's ideas are receiving serious scholarly attention (Burke 1994). In a logic of action, vocational (or professional) knowledge is no longer placed at the periphery of knowledge. Such a logic does not invert the order of traditional logic and privilege the particular over the universal and the practical over the discursive. Rather it incorporates all of these and rejects as false dichotomies theory/practice, universal/particular, discursive/practical, etc. (Hickman 1990). Thus the Greek hierarchy of theoretical knowledge/ practical knowledge/ productive knowledge is rejected.

In summary, this proposed account offers a way of viewing workplace learning as a significant kind of knowledge. Its features include:

- 'Capacity to make successful judgements' as a unitary way of conceptualising knowledge and learning gained by experience;
- Rejection of the traditional Greek hierarchy;
- Allowance for the complexity of contextual factors and variables, while focusing on what is core to the phenomenon.

Recognition by the self of learning that has occurred

In Moliere's play *The Imaginary Invalid*, reference is made to a drug that puts people to sleep due to its 'soporific' and 'somniferous' properties, as though giving the phenomenon an esoteric name provides all of the understanding that the situation requires. Something like this happens 'tacit knowledge' in the VET literature. The mere mention of the term closes off further enquiry. ('Tacit knowledge' literally means knowledge (*cognitio*) that cannot be put into words.) However, this is precisely where inquiry needs to start since the term 'tacit knowledge' is multiply ambiguous. Amongst other things, it can mean knowledge that cannot be put into words, knowledge that can be explicated only with difficulty, craft secrets, intuition (intuitive knowledge), bodily 'knowledge'.

Clearly these are not all the same, though arguably some of them overlap. In principle some of them cannot be put into words, while others certainly can. Of these some might be more difficult than others to put into words. Nevertheless, I maintain that much of the tacit can be, and should be, made explicit for learners.

Research evidence suggests that knowledge and learning that is made explicit for learners is better understood and learnt than knowledge and learning that remain tacit (Evans & Butler 1992). Likewise, research on the teaching and learning of generic competencies (such as planning and organising, or working with others) indicates the need to make such competencies explicit. The research refutes the assumption that learning of such generic competencies will occur incidentally during traditional teaching sessions (Hager et al 1996, 1997). It is for this reason that some universities are paying more attention to the generic outcomes that are supposed to result from their more general courses such as Arts degrees.

In short, not only does the notion of 'tacit knowledge' often serve as an obstacle to inquiry, but it restricts the learning and understanding of learners in cases where such knowledge is able to be made more explicit.

Recognition of the role of the many relevant contextual factors

There is a multitude of contextual factors that ensure that informal learning is very much influenced and shaped by the details of the environment in which it occurs. For example, contextual factors that influence informal learning in the workplace include culture, work organisation, career structure, strategic needs, technology, and change.

Amongst other things, this illustrates why the *cognitio* involved in workplace learning is not confined to standard disciplinary knowledge. In addition, this wider *cognitio* is itself only one component of the contextual judgements typical of the workplace. These also feature a variety of affective and volitional elements. Our everyday language, based on traditional dichotomies, cannot adequately characterise such holistic contextual judgements.

This contextuality of workplace performance may raise questions about the value of generic training programs in some cases. On the basis of their automotive industry research project, Sefton et al. (1995, p179) have discussed the value of contextualised rather than generic training where the aim is for the workplace to become an effective learning environment.

Contextuality in several senses is also a crucial feature of generic competencies in workplace performance. This is a unanimous finding of a number of research projects on the Australian generic (or "key") competencies (eg Stevenson (ed) 1996, Gonczi et al 1995, Hager et al 1996). This research has shown that when any significant component of work is considered, there tends to be a clustering of generic competencies together with more specific competencies as well as features that are particular to the context. Thus the generic competencies, by their nature, serve to direct attention to broader approaches to competence. A second crucial feature of generic competencies is their strong sensitivity to changes in work context. The different forms that generic competencies take in different workplace contexts has now been confirmed by both Australian (Gonczi et al 1995, Hager et al 1996, Stevenson (ed) 1996) and North American (Stasz et al 1996) research.

The Australian research also found that different combinations of generic competencies are required in different industries and occupations. Also, that customer service industries, in contrast to other industries, seemed to require more generic competencies (Gonczi et al 1995) because the providing quality customer service typically involves nearly all the favoured generic competencies. These generic competencies are major features of work in workplaces that focus on high performance or high quality products (Field & Mawer 1996, Gonczi et al 1995). This points to a fatal flaw of mechanistic, narrow competency standards. Competence is about framing an overall performance that is appropriate to a particular context, not following simplistic recipes.

Overall, then, the wide range of senses in which generic competencies display contextuality in the workplace illustrates the variety of factors that complicate recognising workplace learning.

Conclusion

The topic of the recognition of informal learning raises issues that challenge many assumptions of the dominant grand narrative of education, that has tended to write VET out of the story. Challenges posed by the recognition of informal learning include:

- informal learning is typically of a different kinds of things from the learning prescribed by the content of formal education courses;
- informal learning does not fit very well with the narrow view of knowledge that is usually taken for granted in formal education;
- learners themselves, influenced by prevailing assumptions about education and knowledge, are often unaware of the significance, range and depth of their informal learning;
- informal learning is highly contextual in contrast to the generality that is privileged in formal education.

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288

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Workplace based training in small business enterprises: an employer survey

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This paper reports on the results of a small research project which was funded by the Office of Training and Further Education, published in November 1996, and undertaken in Victoria. It also reports on the results of a more recent search for government funded training programs which are conducted in small business enterprises, and where that training and assessment is structured and integral to the overall training program.

The study aimed to investigate small business employer perceptions of the factors which influenced the success of that training. For the purpose of this study, a small business was considered to be a business employing no more that 10 employees. Additional criteria used to determine the suitability of enterprises were that: the employer and/or nominee were acting as workplace supervisor and/or mentor; the employer and/or nominee were not students within the training program; 20% or more of the training and/or assessment program was conducted in the workplace; workplace training/assessment was a structured and integral aspect of the overall training program; and, the training program was delivered as a joint enterprise between TAFE and industry.

It was intended that semi-structured discussion sessions, using a series of open ended questions would be conducted with eight employers from each program identified. However, the identification of a limited number of training programs which met the selection criteria, and, difficulties in organising suitable times and venues for group meetings with employers resulted in modifications to the method. Where possible, group discussions were conducted, and where this was not possible, telephone interviews with individual employers were conducted.

The questions addressed by the survey were:

- Could you comment on the success or otherwise of the program?
- Was the trainee employed at your workplace prior to commencing the program?
- Did you make any special preparations for the arrival of the trainee and did these affect the success of the program?
- Were there preparations which you could have made which would have improved the success of the program?
- Did you attend an orientation session? What form did it take? Was it useful?
- What sorts of support did the college offer and were these useful?
- Was there anything else the college could have done to improve the program?
- What factors associated with the student significantly affected the program and in what way?
- What are the critical factors in the success of these programs?
- Would you like to make any further comment?

Policies promoting the contemporary rise of workplace based training, other than that associated with apprenticeships, can be traced to the late 1980s. For example, *A Changing Workforce* (Dawkins 1988) argued that industry must become more involved in the National Training System by increasing the provision of industry based training and increasing its investment in that training. Also, *Skills for Australia* (Dawkins and Holding 1987) emphasised the central role which TAFE had to play in developing a skilled workforce. The State Training

Board, Victoria (1991) proposed that 15% of TAFE College training should be enterprise based by 1993. The promotion of workplace based training has also been supported by the development of competencies for workplace trainers (Competency Standards Body - Workplace Trainers, Australia 1992), and the National Staff Development Committee for Vocational Education and Training (1995a 1995b) has produced courses for workplace trainers which cover planning, delivery, evaluation and administration of training sessions in the workplace.

A review of the literature demonstrates that there are a range of factors which are important in the success of workplace based delivery of vocational education and training (VET) where delivery is based on a co-operative arrangement between TAFE and industry. These factors include the need for: a clear shared vision and a broad view of learning needs (Learmouth 1993); mutually beneficial working relationship (Anderson 1992); better collaboration between TAFE and industry (Misko 1994); industry clearly defining their training needs (Anderson 1992); acceptance of the value of workplace training (Billett 1993), training and development to be seen as central to the organisational structure, and, in house training to be supported by training facilities (Business Council of Australia 1990); clear policies on how employees will be renumerated whilst in training and on award (Learmouth 1993; Misko 1994); mechanisms to address concerns about increased costs, red tape, record keeping, assessment, and taking people away from their production roles (Misko 1994);

The review also indicated that: TAFE meet the needs of the client and respond quickly, make the necessary investment in human resources, and promoting its skills and capabilities to industry (Anderson 1992); TAFE staff to have high level negotiation skills, the ability to plan and manage projects efficiently, the ability to act as an agent of change within industry (Anderson 1992), and, be pragmatic, practical and prepared to take calculated risks (Anderson 1992; Learmouth 1993); TAFE managers to develop an appropriate organisational culture which fosters innovation and quality in products and services (Anderson 1992); authentic vocational activities which allow the learner to experience the process and product (Billett 1993) through everyday activities (Billett 1994) including direct guidance provided by experts and other workers through formal instruction, observation and listening (Billett 1993 and 1994); the program to encourage self initiation and regulation and sufficient time for the learner to orient and practice (Billett 1993); task structures and requirements to be made explicit (Billett 1993; Docking 1990); employees to be encouraged to identify skill development goals and meet them (Learmouth 1993); the structure and sequence of activities to allow the learner to gain access to understanding (Billett 1993); skill assessment to be based on the observation of workplace performance (Docking 1990); and, trainees to have access to records, receive immediate feedback and be able to independently monitor their progress (Docking 1990).

Identification of programs suitable for research

Criteria which programs were required to meet for inclusion in this project have been described earlier. The essential requirements for participation were workplaces with no more than ten employees, and, where workplace training and assessment was structured and integral to the training program.

Investigations were made through all teaching divisions at a major TAFE Institute, two Industry Training Boards, and two Industry Training Groups. Although there were a number of instances in which there was an intent to conduct courses which met the criteria, most examples of work based training could be classified as apprenticeship training where students spend time on the job but no structured training/assessment occurred and a number of examples of structured work based training were identified in larger enterprises. Consequently, this project encountered significant difficulty in finding training programs which met the research criteria.

Three training programs which met the criteria were the Certificate in Veterinary Nursing, Trainee Dairy Farm Operator Certificate and Workplace Recognition and Training Program.

The Certificate in Veterinary Nursing aimed to train graduates to assist veterinarians in general veterinary practice. Nominal duration of the course was 446 hours with 136 hours spent in work based delivery. All students were provided with print based materials to guide their learning/assessment. The roles of the workplace supervisor/mentor were to supervisor work based training and assessment. Some workplace supervisors had undertaken a 4 hour training session and all had been provided with written information on how to assess students in the workplace.

The Trainee Dairy Farm Operator Certificate aimed to provide training in the operation a dairy farm under instruction but without supervision. The program required 18 months full time study with 4 days per week spent in the workplace and one day at a regional college. At the time of this study, 9 students were involved in the program and had been provided with print based learning materials. The roles of the workplace supervisor were to train and assess trainees in on-the-job competencies, they were provided with documentation relating to their role and the tasks to be assessed. Workplace supervisors attended train the trainer sessions, they met on an irregular basis to share opinions and experiences which related to the program.

Trainees enrolled through the Workplace Recognition and Training Program could enrol in a range of courses which aimed to provide training in basic level clerical training. These programs were available in a range of formats including on and off-the-job training according to the needs of the student and particular organisation. The duration of the courses was dependent on the needs of the individual and the organisation ranging from 1 to 18 months duration, no campus attendance required, programs were self paced and self managed, and, all trainees were provided with print based materials. The role of the workplace supervisor varied depending on the particular situation and the needs of the student. Some supervisors verified the skills of trainees, others acted as tutors/trainers. Workplace supervisors had been provided with print based information, and further support was provided by telephone contact, they had undertaken an induction session which could be face-to-face or by telephone.

Results of interviews

Despite policy support for workplace based training, great difficulty was experienced in identifying programs which met the research criteria. Investigations demonstrated that although there were a number of training programs in small businesses which incorporated time served on-the-job, very few were structured to include documented workplace supervisor roles, or structured and documented workplace training and/or assessment. In the few cases where workplace based training and assessment was structured and documented, the programs were delivered into enterprises of more than 20 employees. Following substantial investigation, three programs with distinctive aims and program characteristics were identified. The difficulty in identifying suitable programs reflects the work of Baker and Wooden (1995) who found that there were no workplace based training courses in enterprises with less than 11 employees and less than 5% of training was workplace based in enterprises of 11-20 employees. And, more recently Robinson (1997), who reported on the Australian Bureau of Statistics (1997), Employer Training Expenditure Australia: July to September 1996 noting that only 13% small business employers were providing training.

In 1998, a search for programs which might have meet the criteria for this study found a small number of other courses. For example, in aiming to investigate the effects of Competency Based Training (CBT) and Recognition of Prior Learning, Smith, Lawrie, Hill, Bush and Lobegeier (1997) reported that three of twelve CBT courses researched by case study had assessment partly in the workplace. They were the Certificate in Engineering (Electrical), Certificate in Office Administration and Diploma of Building Design/Design and Drafting. In addition, they identified 11 of 24 courses researched by interview which claimed to have assessment partly in the workplace. Vallance (1997) reported on the delivery of a Small Business Traineeship in Western Australia. Baker (1996) reported on a farm rural traineeship in which all practical on-the-job training occurred on farm.

This study identified the inappropriate allocation of resources and performance indicators, lack of appropriate assessment strategies and administrative support structures and outdated work practices in VET as issues. Reynolds (1997) also reported on the delivery of a Certificate in Farm Practice concluding that a two day train the trainer program was inadequate in providing employers with the skills to complete assessments. Hilliard (1996) described the development of on-the-job training in the drilling industry and identified the need for supervisors to complete the Workplace Trainer and Assessor Training as a problem. Muddie (1996) described a Small Business Traineeship, and White (1996) a Certificate of Real Estate Operation identifying the need for assessment to be moderated. Therefore, in 1998, training programs which have now been identified as involving workplace based training which is structured and integral are the Certificate in Engineering (Electrical), Certificate in Office Administration and a Small Business Traineeship, Diploma of Building Design/Design and Drafting, a Farm Rural Traineeship and a Certificate in Farm Practice, on-the-job training in the drilling industry, a Certificate of Real Estate Operation, and the three programs identified in the study which is being reported. This finding suggests that, in 1998, there are more examples of workplace based training programs which would have met the criterion for this research than was the case in 1996.

Analysis of data collected for the project which is reported in this paper, found that specific factors identified as influencing the success of workplace based training were not necessarily uniform across all three employer groups interviewed. However, no comment should not be interpreted to mean that a particular issue was not a success factor in workplace based delivery, but rather that this factor was not perceived as relevant or worthy of comment by the specific group of interviewees. A number of issues may have led to this finding: if the respondent group had been larger, a broader range of comments may have been received; the need for comment may not have been as obvious in differing enterprises; and, there may have been a tendency to comment on areas which were found to be inadequate whereas, taken for granted issues are less easily appreciated.

Factors which were identified as important in determining the success of workplace based training programs by one or more employer groups in the research project can be categorised as relating to: college attendance and facilities; college tutors, liaison and communication between the workplace supervisor, trainee and college; course content, learning materials, pacing and deadlines; recognition of prior learning; assessment the workplace environment; the workplace supervisor and workplace supervisor training; attitudes of the trainee; and, other issues.

The Trainee Dairy Farm Operator group indicated that there was a need for college attendance and facilities to support the training program, and the Workplace Recognition and Training group indicated that it was desirable for trainees to have access to college facilities to complete written work.

The need for good communications between industry and TAFE in workplace based training was also identified. The Workplace Recognition and Training group indicated that college tutors needed to be clearly identified whereas the other two groups offered no comment in this regard. However, all respondent groups indicated that there was a need for effective liaison and communication between the workplace supervisor, trainee and college. In particular, the Workplace Recognition and Training, and Certificate in Veterinary Nursing groups indicated the need to ensure that people to be contacted and procedures to be followed in cases where difficulties arose should be clear.

All three respondent groups commented on course content and learning materials. The Workplace Recognition and Training and Trainee Dairy Farm Operator groups indicated that course content should be relevant to the needs of industry, all respondent groups considered that course content needed to be clear, concise, well organised and documented. The Workplace Recognition and Training and Trainee Dairy Farm Operator groups also considered that the course should be structured enough to support the trainee and provide adequate opportunity for completion. The

Trainee Dairy Farm Operator group also commented that trainees should be able to monitor their own progress.

The only respondent group to make mention of the importance of recognition of prior learning was the Workplace Recognition and Training group, this finding may reflect the central place which recognition of prior learning has in this program.

The Workplace Recognition and Training, and Certificate in Veterinary Nursing groups commented that there was a need to standardise the quality of assessment which was undertaken in the workplace. In addition, the Workplace Recognition and Training group indicated that there was a need for assessment requirements to be clearly stated, for the trainee to have adequate time to complete the assessment, and that there was a need for adequate resources to be available for assessment. This concern for standards in assessment indicates a perception that interpretation of the requirements for assessment may vary between workplaces and reinforces the need for adequate documentation of assessment requirements.

The Workplace Recognition and Training, and Certificate in Veterinary Nursing groups indicated that there was a need for adequate equipment and facilities in the workplace. The Certificate in Veterinary Nursing group also indicated that the work load of the workplace needed to be adequate to provide a real experience, and that all workers needed to be prepared for the arrival of the trainee. The Workplace Recognition and Training, and Certificate in Veterinary Nursing groups indicated that there was a need for trainees to be aware of workplace protocols and procedures. They indicated that trainees should be oriented to general issues such as appropriate dress and the need to attend work punctually as well as protocols which were specific to individual workplace.

All respondent groups commented on the workplace supervisor. The Workplace Recognition and Training, and Certificate in Veterinary Nursing groups indicated that the workplace supervisor needed: to be clearly identified (so that the trainee had a clear contact point), the time and relevant skills to train and assess the trainee; and, the support of the workplace to perform the role. The Workplace Recognition and Training group commented that supervisors needed to be reimbursed for time off line and where necessary should be backfilled. The Trainee Dairy Farm Operator group indicated that the payment of supervisors was desirable but not essential.

The training of workplace supervisors was commented on by all respondent groups. The duration of supervisor training varied significantly between courses, in the case of the Trainee Dairy Farm Operator Program, all supervisors had attended a two day training course, whereas supervisor training in the other two courses was no more than four hours. However, in all cases the roles and expectations of workplace supervisors was well documented, and all respondent groups felt that they had been adequately supported by contact with the appropriate TAFE staff and documentary material. It was considered that purpose of workplace supervisor training should be to support and orient supervisors to their role, and, that given the pressures of small business and the difficulties in leaving such enterprises, the training should be short, effective and efficient.

Trainee attitudes were also a cause for comment by all respondent groups. It was considered that trainees needed to show initiative, motivation and persistence. They should be prepared to integrate into the workplace and accept alternative views. The Certificate in Veterinary Nursing group indicated that trainees should be prepared to ask questions and the Trainee Dairy Farm Operators group indicated that trainees should be prepared to challenge current work practices.

The Workplace Recognition and Training group indicated that the possibility of ongoing employment needed to be real and clearly stated, and that workplace based training needed to be of benefit to the workplace. The Certificate in Veterinary Nursing group indicated that issues relating to WorkCover and other contracts between providers and workplaces needed to be clear.

Finally, it should be noted that other authors have identified factors which influence the success of workplace based training which were not identified in the current project. These included the need for: TAFE staff to be pragmatic, practical and prepared to take calculated risks (Anderson 1992; Learmouth 1993), have high level negotiation skills and the ability to plan and manage projects efficiently, and to act as an agent of change within industry (Anderson 1992); TAFE managers to develop an appropriate organisational structure which fosters innovation and quality products and services (Anderson 1992); TAFE to make the necessary investment in human resources and promote its skills and capabilities to industry (Anderson 1992); a broad view of learning needs to be developed, industry and TAFE need to develop a shared vision and employees to be encouraged to identify skill development goals and meet these (Learmouth 1993); indirect guidance should be offered through everyday activities (Billett 1994); the structure and sequence of activities should allow learners to gain access to understanding (Billett 1993); trainees to have access to records, receive immediate feedback and be able to independently monitor their progress (Docking 1990)

Conclusion

This project aimed to identify factors which small business employers perceived as important in contributing to a successful workplace based training program and which met a number of criteria. Essentially, the program was to be conducted in an enterprise of no more than 10 employees, and, where the workplace training/assessment was integral and essential to the training program.

Given the promotion of workplace based training it was surprising that, in 1996, great difficulty was experienced in identifying programs which met these criteria. When three programs were identified, it was found that employers were able to identify a number of factors which they considered had contributed to the success of these programs. These factors showed similarity with, but failed to identify the full range of factors which had been identified in other studies. In 1998, a search for programs which might have met the selection criteria for this project found a number of additional courses which were not identified in 1996. This suggests that there may have been an increase in the number of workplace based training programs in which training/assessment is structured and integral to that program between 1996 and 1998.

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Do skills transfer? An empirical study

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The success of any training hinges on whether or not skills acquired in training will be used when they are required once the training is over. When skills learnt in one context are demonstrated in other contexts, this is referred to as transfer.

According to Perkins and Salomon (1988) learning to drive a truck can be made much easier and quicker if one has already learnt to drive a car. They call this near transfer. Learning to be precise in mathematics may encourage thoroughness in bridge. Salomon and Perkins (1987) call this an example of far transfer. However Ceci and Ruiz (1993) are of the opinion that the distinction between what is considered to be near and far transfer is not clear-cut.

The question of transfer has always been important, but it has become especially so with the implementation of reforms aimed at improving global competitiveness through training and industry restructure. Because the Australian labour market has witnessed the disappearance of many low skilled jobs traditionally performed by early school leavers it has become increasingly important to prepare students for the more complex jobs which remain.

When so much responsibility for delivering skills, which will benefit the workplace and eventually the nation, is placed on the school system, the question of whether or not it is reasonable to expect that skills learnt in the classroom will transfer to other areas is of major importance.

Do skills transfer? -a brief look at the literature

There is little argument that skills like driving a car, boning a chicken or painting a house are generally transferred to similar or different settings without much extra effort. Today the transfer debate centres on whether skills or competencies required for success in the workplace perform in a similar banner.

In Australia these competencies have been identified as competencies in: communication, using mathematical techniques, planning, teamwork, collecting, organising and analysing information, problem-solving, using technology and cultural understanding (Mayer 1992). Mayer believes that these key competencies are generic and that all students should be able to demonstrate these on leaving school. Although few people would debate the importance of such skills for the workplace and for everyday life, what is now being questioned is the assumption that they are generic. That is that they can be transported to other contexts. This debate is fuelled by conflicting evidence from studies of the benefits of training, and differences among researchers about the explanations for these findings. An in-depth review of the transfer literature is provided in Detterman and Sternberg (1993) and Misko (1995).

Training makes no difference

Ceci & Ruiz (1993) believe that "the idea that great advances in knowledge and technology have resulted from an individuals ability to transfer solutions across diverse domains is, if not a fiction, a rare event" (p167). They argue that transfer across domains is more a function of the 'invitation to transfer' that is present in the original learning, along with a comprehensive knowledge of a particular domain that is important. Detterman (1993) is of the opinion that "the lesson learned from studies of transfer is that, if you want people to learn something, teach it to them. Don't teach them something else and expect them to figure out what you really want them to do"(p21). The position taken by Ceci & Ruiz and Detterman represents a major stream of thought in the debate about transfer.

Some evidence for these conclusions can be traced back to studies conducted by Thorndike and Woodworth (1901a, 1901b). These researchers measured how accurately subjects were able to estimate lengths of lines, areas of shapes or weights of objects. They also measured their speed and accuracy in locating letters in words, identifying words that had misspellings and identifying geometric figures. When they gave subjects a transfer test they found that improvement increased only when objects or items of a similar shape or type as those used in training were used. The Thorndike and Woodsworth studies have been criticised for using tasks which were not relevant to the world of work. However their findings have been used to support the argument that we cannot expect skills to transfer across contexts.

Others have also concluded that training produces few transfer benefits. Findings from American military studies (Boldovici 1987) and computer programming training (Pea and Kurland 1984) have also shown that training does not improve subsequent performance. Weapons training did not help troops to be any better able to use weapons in the field, and computer programming training did not help students to be more rigorous in mathematics.

Furthermore professional abacus counters did not perform as well on written tests as they did using the abacus. (Stigler, Barclay and Aiello 1982 cited in Billett 1994). Street-vendor children,proficient at calculating correct change for their customers, were found to be less able to solve similar problems in mathematics classes (Carraher, Carraher and Schlieman 1983 cited in Billett 1994). In addition street bookmakers able to calculate complex combinations for lotteries were unable to make similar calculations in a different context (Schlieman & Acioly 1989 cited in Ceci & Ruiz 1993). Further examples of the inability of individuals to transfer learning to different contexts are contained in studies reported in Cronbach and Snow (1978) and Detterman & Sternberg (1993).

It would be easy to conclude from this brief review that any hope for delivering generic skills training is in vain. We must, however, not accept these results without asking whether trainees in these studies had initially learnt the skills they were expected to transfer to a proficient level in the first place (Boldovici 1987, Salomon and Perkins 1989).

Training makes a difference

There are those who believe that certain thinking and problem solving skills that are common across knowledge domains can be taught in a formal or separate way. (Ennis 1990, Fong & Nisbett 1990, Lehmann, Lempert and Nisbett 1988, Fong, Kranz & Nisbett 1986, Herrnstein et al. 1986, Nickerson Perkins & Smith 1985, De Bono cited in McPeck 1990, Whimbey & Lockheed 1980, Scheerer 1963, Polya 1957). Fong and Nisbett, and Fong, Kranz and Nisbett, and Lehman Lempert and Nisbett provide evidence to show that formal training in statistics and logic can help improve students' reasoning about everyday events. De Bono, and Whimbey and Lockeed provide strategies for problem solving based on adherence to rules applied systematically and logically.

Herrnstein et al (1986) taught skills in observation classification, reasoning, critical use of language, problem-solving, inventiveness and decision-making to children from economically and educationally deprived backgrounds. When they compared these students to a control group their results on a number of tests showed substantial improvements. These improvements were evident across a range of different ability groups.

Haller, Child and Walberg (1988), and Brown and Palincsar (1989) believe that children can be taught to improve their reading comprehension. They can be taught to read information backwards and forwards, compare what they already know with what exists in a text, and compare main ideas. They can be taught to check their reading, ask themselves questions about the information and set themselves goals from a set of objectives.

The role of intelligence in transfer

Other special skills an individual brings to a task should not be ignored. According to Ceci and Ruiz (1993) the ability to transfer is dependent on being able to think in abstract ways. That is, being able to identify structures or principles which underpin problems. Because by definition intelligent individuals are supposed to be better able to think in such complex ways they are considered to be more likely than individuals of low intelligence to be able to transfer knowledge across domains. Individuals of low intelligence are only likely to exhibit this kind of behaviour when they have large amounts of domain-specific knowledge.

Clark and Vogel (1985) also believe that brighter individuals transfer `farther without instructional help' (p122) and that the best predictor of transfer is general ability. They also report work by Snow and Lohman (1984 cited in Clark and Vogel 1985) which examine how different forms of intelligence operate in transfer. Crystallised intelligence generally refers to skill and knowledge that are amassed through exposure to and experience with similar tasks in the past. Fluid intelligence represents the ability to be flexible in the solution of new problems. Clark & Vogel feel that although individuals with high crystallised intelligence will succeed in near transfer tasks, individuals with high levels of fluid intelligence who will succeed at far transfer.

The role of learning in transfer

Although transfer has often been differentiated from learning by many researchers there are those who also believe that any discussion about transfer must treat learning as a sub-component (Ferguson cited in Detterman 1993, Greeno, Smith & Moore 1993). In addition there are other researchers who believe that it is impossible to distinguish between the two (Butterfield, Slocum & Nelson 1993).

Greeno, Smith and Moore (1993) describe the position taken by situated cognition theorists that 'knowing is the ability to interact with things and other people in a situation, and learning is an improvement in that ability – that is getting better in a situated activity' (p 100). According to these theorists the social interactions which take place during learning or performing activities will affect whether individuals categorise these activities as belonging to a larger knowledge domain. How well they are able to do this will also facilitate their ability to learn in order to transfer knowledge between contexts, or to relate events in one situation previous experiences (Brown 1989 cited in Greeno Smith & Moore).

To find out whether learning and transfer were distinct entities, Butterfield, Slocum, and Nelson (1993) examined 13 teaching and testing sets. Within these sets they grouped actions which had been learnt and performed by human and animal subjects into four major categories (See Table 7.3, pp 212-214). These included: previously learned productions or operants, test context and goals, present action, and novel element.

When they compared these attributes for the 13 teaching and learning sets, they found it impossible to make a distinction between what could be termed as learning and what could be termed as transfer.

The premise that the extent of learning will have an impact on ability to transfer has also been supported by studies which show that the knowledge and experience one has of a particular skill will affect transfer of that skill to a new context. Druckman and Bjork (1991) found that the amount of`original learning' affected an individual's subsequent performance. Woloshyn, Pressley and Schneider (1992) tested Canadian and German adults on geographic details about each other's countries. They found that those with prior knowledge about the country on which they were tested were better able to recall facts about this than were those who did not have prior knowledge. Studies reviewed by Bransford (1979) also showed that performance in a task improved with the use of cues or prompts.

Students do better when they are given tasks they have attempted before or are similar to a task that they have attempted before (Gick and Holyoak 1987, Druckman and Bjork 1991). This improved performance has been explained by their ability to recognise the goals and problem-solving processes they have used in the initial task (Gick and Holyoak 1987).

Research methodology

The study aimed to find out whether students who were trained to use particular skills in one context (a mathematics class) were able to transfer these skills to another context (a social science class). The skills chosen for this study were the collecting and organising and analysing of information and using mathematical techniques to construct a pie graph from this information. The contexts chosen for the study was the mathematics context (a year 10 mathematics class) and a social science context (a Year 10 society and environment class).

Two groups of students were involved in the study. One group was involved in pilot testing the instruments. The other was involved in the main study. No students who were involved in the pilot testing of instruments were involved in the main study.

The main study comprised 156 students from seven Year 10 classes at a country secondary school in South Australia. Their average age was 15.09 (sd .40). Of these 141 students completed the total study. However only 121 students completed the task without assistance from other students or teachers. All statistics are reported in terms of these 121 students.

Initial and transfer task performance comparisons

In the initial task students were provided with a list of 150 companies from different industries judged as being the top Australian companies in June 1995. Collecting the information here required students to count and write down the number of companies in each industry and to report the four largest industry groupings. It also required them to indicate the number of companies in an other category.

In the transfer task students were given three maps depicting various metropolitan and country council districts in South Australia. These maps contained information on the number of building approvals for each council for 1993. Collecting the information here required students to count and write down the number of building approvals for each council district, and to report the five councils with the highest number of building approvals. It also required them to indicate the number of approvals in an other section.

In the initial task well under half of the students were able to accurately report the number of companies in each industry. In the transfer task well under a third of the students were able to indicate the exact number of building approvals for each council.

If we accept varying levels of accuracy we find that these numbers increase dramatically. These data are presented in Table 1.

Table 1: Collecting information - varying levels of accuracy.

Accuracy Levels	Initial Task % of all students	Transfer Task % of all students	Both tasks % of all students	% of successful students in initial task
100%	41.3	22.3	9.0	22.0
	(n=50)	(n=27)	(n=11)	(n=11)
>=90%	58.7	76.9	49.6	84.5
	(n=71)	(n=93)	(n=60)	(n=60)
>=75%	76.9	92.6	71.9	93.5
	(n=93)	(n=112)	(n=112)	n=87)

Analysing the information

In the initial task just over half of the students were able to report the four most frequently represented industry groupings and the number of companies included in the 'other' category. In the transfer task, well under a fifth of the students were able to accurately report the five councils with the highest number of building approvals and the number of approvals in the 'other' category. These data are presented in Table 2.

Table 2: Analysing information - varying levels of accuracy.

Accuracy Levels	Initial Task	Transfer Task	Transfer	Transfer
	% of all students	% of all students	% of all students	% of successful students in initial task
100%	45.5	16.5	7.4	16.4
	(n=55)	(n=20)	(n=9)	(n=9)
>=90%	45.5	16.5	7.4	16.4
	(n=55)	(n=20)	(n=9)	(n=9)
>=75%	81.0	85.1	70.2	86.7
	(n=98)	(n=103)	(n=85)	(n=85)

From tables 1 and 2 it is evident that far fewer students were able to perform at the 100% level of accuracy in the transfer task than in the initial task.

Students were given points for identifying the correct number of companies in each industry in the initial task and building approvals in the transfer task. Although a majority of students were able to identify the correct number of companies or building approvals in initial and transfer tasks respectively, as a total group they tended to do slightly better in the transfer task than in the initial task.

However there were no major differences between the average scores obtained by the total group for identifying in the initial task the number of companies and in the transfer task the number of building approvals. These data are presented in table 3.

Table 3: Collecting and analysing information: Maximum scores and average scores and standard deviations (in parentheses) obtained by total group for Initial and Transfer Tasks

	Maximum score	Initial Task	Transfer Task
Identifying number of items in each category	19	15.90 (sd 4.67)	17.25 (sd 3.34)
Identifying number of items in most frequently reported categories	10	8.0 (sd 2.76)	7.97 (sd 2.14)

Pearson product-moment correlation coefficients for dependent samples for collecting and analysing the information components of the two tasks were computed to show whether in fact those students who had received high scores in the initial task also received high scores in the transfer task. No statistically significant relationships were derived.

Computing values for the components of the pie graph

Four points were awarded to students if they were able to show evidence of having used all components of the formula for computing the degrees required for each segment of the pie graph. In the initial task almost three-quarters (70.24%, n=85) of the students were able to produce all components. Of these just over half (54.1%, n=46) could reproduce the formula in the transfer task.

Pearson product-moment correlation coefficients for dependent samples were also computed. These showed a moderate and positive statistically significant relationship (r=.45, p=.000) between scores obtained in the initial task for producing the formula and those for doing so in the transfer task. Not, surprisingly, this means that the better performers in the initial task were more likely to get better scores in the transfer task and vice versa. It also means that the lower scorers in the initial task were more likely to get lower scores in the transfer task and vice versa.

A paired-samples test statistic showed that students performed statistically significantly better in the initial task than they did in the transfer task (t=5.00, df 120, p= .000). The difference between the means was .90 (sd 1.98). This suggests that students are not always able to transport the skill from one context to another.

Computing the degrees for each part of the pie

Students were given points out of 20 to indicate their ability to calculate the degrees for each component of the pie-graph. In the initial task almost two-thirds (61.2%) of the students were able to accurately compute the degrees for each part of the pie and obtain the full marks. Of these about a quarter (25.6%) were able to do so in the transfer task. If we accept lower levels of accuracy, we find that these figures improve dramatically. Table 4 provides a breakdown of the performance of students at 100%, 90% and 75% levels of accuracy.

Table 4: Computing the degrees - varying levels of accuracy

Accuracy Levels	Initial task % of all students	Transfer task % of all students	Both % of all students	% of successful students in initial task
100%	61.2 (n=74)	30.6 (n=37)	25.6 (n=31)	41.9 (n=31)
>=90%	70.2 (n=85)	38.0 (n=46)	34.7 (n=42)	49.4 (n=42)
>=75%	70.2 (n=85)	39.7 (n=48)	36.4 (n=44)	51.8 (n=44)

The average score received by students in the initial task for this component was considerably higher than that obtained in the transfer task. These results are described in table 5.

Table 5: Computing the degrees for each part of the pie: total score, average scores, and standard deviations (in parentheses).

	Maximum score	Average score
Initial task	20	13.9 (sd 9.09)
Transfer task	20	8.77 (sd 9.24)

It is obvious from the standard deviation scores that there is a considerable amount of variation between the scores of students for both initial and transfer tasks.

There was a moderate statistically and significant positive relationship between performance in the initial task and performance in the transfer task (r=.43, p=.000). This means that higher scores in the initial task were associated with higher scores on the transfer task and vice versa and lower scores on the initial task were associated with lower scores on the transfer task and vice versa.

The differences between the average scores received by students in computing the degrees for each component of the pie graph in initial and transfer tasks showed that as a group students performed far better in the initial task. This is demonstrated by the statistically significant test statistic for paired samples (t= 5.78, df 120 p = .000). The difference between the means was 5.13 (sd 9.8).

Constructing the pie graph

Each component of the student's pie graph was measured with a geoliner for accuracy. Marks out of 20 were awarded for marking out the segments of the pie graph according to the degrees which had been computed. Results showed that in the initial task well over a half (58.7%, n=71) were able to use a geoliner to accurately measure out each component of the pie according to the degrees they had computed in the initial task. This was contrasted by the smaller number of these students (32.4%, n=25) who were able to reproduce this skill to this accuracy level in the transfer task. In addition considerably more students obtained a zero score in the transfer task than had done so in the initial task. Data on how well students performed in this component of the task are provided in table 6.

Table 6: Constructing the pie graph: Varying levels of accuracy

Scores obtained	Initial Task	Transfer Task
	% of students	% of students
0	24.0	35.5
1-10	6.6	16.6
11-20	69.4	47.8

A breakdown of how well students performed at 100%, 90% and 75% levels of accuracy also appears in table 7.

Table 7: Constructing the pie graph - varying levels of accuracy

Accuracy Levels	Initial task	Transfer task	Both	% of successful students in initial task
100%	58.7 (n=71)	25.6 (n=31)	20.7 (n=25)	35.2 (n=25)
>=90%	66.9 (n=81)	36.4 (n=44)	32.2 (n=39)	48.2 (n=25)
>=75%	68.6 (n=83)	38.8 (n=47)	34.7 (n=42)	50.6 (n=42)

When we examine the average scores in initial task and transfer tasks we find a moderate and statistically significant positive relationship (r=.45, p=.000) between the two scores. This means that higher scores in the initial task were more likely to be associated with higher scores in the transfer task and vice versa, and lower scores in the initial task more likely to be associated with lower scores in the transfer task and vice versa.

There was a statistically significant difference between the two scores (t=5.82, df 120, p=.000) with students performing better in the initial task than in the transfer task. The difference between the two means was 4.83 (sd 9.13).

Labelling the pie graph

The overwhelming majority of students (78.5%, n=95) did not remember to give their graph a title in the initial task. An even greater percentage (92.6%, n=112) did not include a title in the transfer task. Of the 26 students who gave their pie graph a title in the initial task, five remembered to do so in the transfer task. These data also show that skills used in one context do not automatically transfer to different contexts.

Combining the scores

Students' ability to construct a pie graph from given information was examined by adding the points received for accurately collecting and analysing the data, producing the formula, computing degrees and constructing and labelling the pie-graph. Initial and transfer tasks received a maximum score of 75 points. Average scores were greater in the initial task than they were in the transfer task. However although there was a greater variation between the scores within each task it was slightly lower for the transfer task (Table 8).

Table 8: Overall results - average total scores, standard deviations (in parentheses) and range of scores for initial and transfer tasks.

	Maximum score	Average score	Range of scores
Initial task	75	54.85 (sd 24.16)	4 - 75
Transfer task	75	45.18 (sd 21.96)	2 - 75

A closer examination of the differences between student performance in the two tasks is presented in table 9.

Table 9: Overall performance - Scores obtained in initial and transfer tasks.

Scores obtained	No. of students	Initial task	No. of students	Transfer task
0-29	n=31	25.6	n=49	40.5
26-69	n=27	22.3	n=36	29.7
70-75	n=63	52.1	n=36	29.7

It is evident from table 9 that greater numbers of students tended to score at the lower end of the scale. A more comprehensive picture of how students performed appears in table 10.

Table 10: Overall results - varying levels of accuracy

Accuracy Levels	Initial task % of all students	Transfer task % of all students	Transfer % of all students	Transfer % of successful students in initial task
100%	16.5 (n=2)	.05 (n=1)	.05 (n=1)	.05 (n=1)
>=90%	57.0 (n=69)	33.1 (n=40)	25.6 (n=31)	44.9 (n=31)
>=75%	66.9(n=81)	39.7 (n=48)	34.7 (n=42)	51.9 (n=42)

A moderate and statistically significant positive relationship (r=.46, p=.000) was found between the total scores in the initial task and those in the transfer task. This means that high scores in the initial task were more likely to be associated with high scores in the transfer task and vice versa and low scores in the transfer task were more likely to be associated with low scores in the transfer task and vice versa.

A comparison of the two means using a paired samples t-test shows that students performed better in the initial task than in the transfer task. It returned a statistically significant test statistic of 4.36 (df 119, p=.000). The difference between these means was 9.52 (sd 23.91).

General ability in constructing a pie graph

A judgement based on whether students had collected the information, produced the formula and then proceeded to compute degrees and construct the pie graph based on their analysis of the information was also made. This judgement did not demand accuracy at the 100 per cent level in all components although it did depend on the correct formula being used in all cases. This method showed that the ability to construct a pie graph from given information was demonstrated in the initial task by almost two-thirds (70.24%, n=85) of the students. Of these just over half (52.1%, n=45) were judged as being able to construct a pie graph from given information in the transfer task. This also means that almost half of the students who were able to construct a pie graph in the initial task were not able to do so in the transfer task.

Performance across teacher-defined achievement groups

Teachers were asked to rate students on a four-point scale based on student achievement of course objectives in mathematics. They divided students into four achievement groups. Data on the scores obtained by each of the groups on all components of initial and transfer task are presented in table 13.

Table 13. Means and standard deviations (in parentheses) for each component across achievement groups*

	Group 1 (below average) (n=17)		Group 2 (average) n=35		Group 3 (good) n=37		Group 4 (advanced) (n=31)	
	Initial task	**Transfer task**	**Initial task**	**Transfer task**	**Initial task**	**Transfer task**	**Initial task**	**Transfer task**
Collecting information	12.24 (5.38)	15.19 (5.18)	13.77 (5.73)	17.60 (2.89)	18.03 (1.54)	17.45 (2.80)	17.75 (2.89)	17.76 (2.89)
Analysing information	6.12 (3.77)	7.84 (2.34)	7.20 (3.22)	7.62 (2.92)	8.68 (1.94)	7.97 (1.85)	9.16 (1.24)	8.44 (1.05)
Applying the formula	1.41 (1.97)	1.05 (1.74)	2.06 (2.03)	1.57 (1.96)	3.35 (1.49)	2.10 (1.98)	4.00 (.000)	2.81 (1.72)
Computing the degrees	6.82 (9.54)	5.53 (8.44)	9.69 (10.11)	7.23 (9.31)	16.62 (7.43)	9.05 (9.39)	19.74 (0.63)	12.23 (8.69)
Constructing the pie graph	7.0 (9.28)	4.71 (7.87)	9.80 (9.70)	7.26 (8.53)	16.68 (6.79)	10.35 (8.49)	19.68 (7.0)	12.48 (8.41)
Combining Components	33.70 (23.85)	34.32 (21.51)	42.71 (27.32)	41.31 (21.01)	63.75 (16.14)	47.49 (20.68)	70.90 (4.65)	54.00 (20.00)

*Teacher-identified achievement groups - Groups 1-4

The results in table 13 show that in initial and transfer tasks students in higher teacher-identified achievement level groups obtain higher scores than students in lower teacher-identified achievement level groups in all but two cases where the scores are almost equivalent. When we examine the results more closely we find that apart from collecting the information and analysing the information all groups obtain lower scores in the transfer task than they obtained in the initial task. For collecting the information and analysing the information the results are reversed. That is, all groups generally performed better in the transfer task than in the initial task.

When we take the differences between the scores obtained for computing the degrees and constructing the pie graph in the two tasks, we find that although the higher achievement level groups performed better than those of lower achievement they also obtained higher difference scores. This means that their scores in the transfer task deviated more markedly from their scores in the initial tasks than the scores of the lower achievement level groups. This is especially evident when we add the scores obtained for each component and examine this total as a final score.

One-way analysis of variance (ANOVA) procedures were conducted to examine the difference between the means for each of the groups. A scheffé post-hoc comparison test was also conducted to see which of the groups were statistically different from each other. The ANOVA results confirmed statistically significant differences between the groups. The scheffé post-hoc comparisons showed that the advanced group differed significantly from the two lowest achievement level groups in all but one of the components of the initial task. It differed only from the below average group in constructing the pie graph, applying the formula and combining the components in the transfer task. The good group differed from the two lowest achievement level groups in collecting the information, applying the formula, computing the degrees and constructing the pie graph in the initial task. There were no statistically significant differences between this and other groups in any of the components in the transfer task.

When we look at the global judgements for competence in both tasks just over half (54.8%) of the advanced achievement level group demonstrated competence as compared to just over a third of the 'good'(40.5%) and average(31.4%) achievement level groups. Only two of the below average group were able to do so.

Discussion and conclusions

This study has shown that there is no guarantee that being able to perform a skill in one context always means being able to transfer the skill to another context. However, it seems that whether or not the skill is acquired at a proficient level in the first place has a major bearing on how well it transfers to a new context.

In addition the study has found that students of higher mathematics achievement level as defined by their teachers are more likely to be able to transfer the skill to a new context than are those of lower achievement. However, because substantial numbers of those of high achievement also found it difficult to transfer the skill to the new context, we can say that achievement level in mathematics on its own is no guarantee of transfer.

Transfer promotes skill acquisition. The major finding in this study is that transfer can generally occur if the skill has been learnt to a proficient level in the first place. That is, transfer is produced by better skill acquisition. This is a heartening finding for teachers and trainers. Not only does it support the long held view that training is not completely in vain but it can give them renewed optimism and hope that they can make a difference to student learning and to student ability to transfer.

The findings also give increased hope to those who believe that generic skills like using 'mathematical techniques' are not only the preserve of the intelligent, but that those of less ability can also learn skills which hopefully can endure over time and can be applied to different contexts.

Although the study did not measure the role played by accumulated knowledge a case exists for studying the relationships between this and skill acquisition.

Retention of learning is necessarily involved in transferring strategies to solve problems in new contexts. One factor which may help students improve their retention is to ensure that the skill is firmly embedded in the first place. That is, that students have the extensive opportunities to practise the skill correctly so that it becomes automatic and can be retrieved at a later date.

The findings suggest that there were few retention problems with the basic procedures of collecting organising and analysing the information. There were few decreases in performance in the transfer task. This may have been due to the fact that collecting and analysing information in the transfer task were more straightforward than in the initial task. Other explanations could be that:

- counting cases and analysing information at a low level seems to be a skill which transfers easily between contexts;
- the instructions that are given involve little need to transport skills between students picking up cues from contexts; and
- what other students seem to be doing may provide subtle clues to uncertain students.

Implications for vocational education and training

The findings of this study support the importance of initial learning and skill acquisition in the transfer of skill to different contexts. There is nothing unusual about these findings. Teachers have always known that the better you are able to perform a skill in the classroom the better you will be able to perform the skill in an exam or outside the classroom.

The study has also shown that apart from a few cases, demonstration of a skill in one context is no guarantee of being able to repeat the skill to the same level in another context. If this is true for all skills it argues against relying on a single demonstration of competence to reflect the achievement of a competency standard in the classroom or the achievement of a competency standard in the workplace. There are also definite implications for the administration of processes for the recognition of prior learning and credit transfer .

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Emerging truths in public sector training

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This piece of research was conducted by the newly formed Public Sector Services team in the Business and Public Administration Educational Services Division (B&PA ESD) in TAFE NSW. The purpose of undertaking the research was to identify public sector employee enrolments in TAFE NSW courses and to identify trends and issues for VET delivery to the public sector. The research is preliminary and will form the basis for further development of strategies to provide VET to the public sector which meets needs that are particular to the public sector context.

Information was gathered from three sources in TAFE NSW: Program Managers, Senior Head and Head Teachers (S/HT) and Business Development Units (BDUs), from senior public sector employees at the Public Sector Search Conference *Performance Through People* conducted jointly by B&PA ESD and the NSW Public Sector ITAB inc. (NSWPSITAB) and a literature search.

Literature search

Results of the literature search can be divided into several categories. These include writings firstly, which analyse the culture and role of the public sector, which are most numerous prior to 1990 (see Crawford 1996, Mascarenhas 1990, Nolan 1997, Parker 1989, Peters 1995, Wilenski 1986). The most numerous set of writings we found is in a second category 'management in the public sector' and most were post 1990 (eg . Hamilton 1990). Hamilton's chapter discusses some of the benefits and costs of the major changes in the structure of the Federal Government which took place in July and places these in the context of a longer-term programme of reform of the public service. The analysis starts by outlining the major reasons for the changes and some of the criticisms that have been made of them. It goes on to discuss other major public service reforms, including the financial management improvement programme, the efficiency scrutiny process and office restructuring. All of these reforms have the broad purpose of enhancing the authority of individual ministers and departments, removing unnecessary central controls and processes, creating a focus on programme results rather than administrative means, coping with a greater tolerance of innovation and risk taking.

The search revealed very few writings on VET specifically for the public sector.

Koch (1996) examines some of the issues public sector managers face when attempting to adopt 'businesslike' decisionmaking and entrepreneurialism eg. attempting to judge the real benefits of public services or the value of relative standards of service delivery without valid and reliable measures. Koch argues that improved contract management is a method to address this issue. Political legislative or administrative barriers to alternative decisionmaking options. TAFE NSW for instance is being advised that it is part of the training market and must compete accordingly whilst it is still legislatively obliged to provide particular types of training. What, if any, responsibility do public sector organisations have to adopt particular government policies. For example, both the NSW Government and the Federal Government have policies supporting entry level training particularly, training for young people. However, taking on apprentices or trainees is a cost to the organisation so should the decision fall in the public service basket or the bottom line basket?

Methodology

Prior to 1995, gathering data on the numbers of public sector employees in TAFE NSW courses could be done by accessing the employer details on the enrolment form. Since 1995 however, due to privacy considerations, the employer details section of the enrolment form has been mandatory only for apprentices. Some non apprentice students continue to complete this section but not in sufficient numbers to be reliable. Student enrolment data was therefore gathered in two ways: from enrolment forms for apprentices and from a random sample of courses and TAFE NSW campuses identified using the TAFE NSW Course Information System (CIS).

Surveys were distributed to S/HT with copies to ESD contacts in the Institutes for their information. (Appendix B). S/HT were asked to survey these classes to identify public sector employees. The results are not a complete survey of all classes and students. Full and part-time classes were surveyed and the results are interpreted as indicative of trends in enrolments. This was followed up by personal contact with S/HT to encourage participation in the survey.

Surveys were sent to Institutes using curriculum program area titles, available to us at that time and in different ways in different Institutes. For example, some Institutes are now organised on a Faculty model and some on a Federated model, and some have a 'mixed' model. As a result some surveys 'went astray'. Others who were not intended to receive a survey did and responded! In some cases staff provided with a sample of the surveys for their information distributed them to sections not included in the sample. However, since all the forms were coded it was relatively easy to identify which was which.

Program Managers were surveyed to identify courses and modules which are targeted to public sector employees and whether there were consistent enrolments from the public sector (over 3 years; 1995-1997) or growing enrolments from the public sector.

Business Development Units were surveyed to identify the extent and type of public sector commercial provision in TAFE NSW Institutes. The information gathered varied depending on 'corporate memory', information systems and how long the unit has been established.

On November 26 senior public sector employees participated in a search conference (*Performance through People*) conducted jointly by B&PA ESD and the NSW Public Sector ITAB inc. The purpose of the Conference was to identify changing VET needs, both in terms of content and delivery, in the public sector. The first session was an 'environmental scan' of the changing VET needs of the public sector. Following, examples of recent developments in VET delivery to the public sector were described. The third and longest session of the Search Conference brought the participants through a process of identifying future VET requirements and strategies for progression. The final session included a 'where to from here' summary from Ms Kaye Schofield who also produced a post conference paper which linked strategies identified during the Conference to emerging thinking on the role and future of the public sector.

A literature search on research on the public sector, public sector reform, and VET and the public sector was carried out. The search covered the Australian Education Index (AEI), ERIC, the NCVER database and APAIS.

Findings

Findings from the Program Manager interviews and the survey results from Senior Head teachers are reported under the following headings:

- Public access courses specifically designed for public sector employees in areas directly related to current occupation
- Contracted training for Public Sector Agencies
- Public Sector Employee participation in courses not specifically designed for the public sector or where employment in the public sector may follow completion
- Emerging areas of TAFE training for the Public Sector.

Business Development Units

One Business Development Unit markets specifically to the public sector whilst others market to the public and private sector with a common approach. A minority of BDUs use a price differential between private and public sector clients. In metropolitan locations BDUs compete with a range of other providers for public sector and private sector business. In non-metropolitan locations TAFE NSW is often the strongest commercial provider to the public sector.

In both metropolitan and non-metropolitan locations there are some BDUs forging strong partnerships with the public sector while others have little or no links. Indications are that where strong relationships exist they were originally forged through an approach by the public sector organisation to TAFE NSW or through long term relationships between government departments who have traditionally used TAFE NSW for training.

The types of services provided commercially include:

- Delivery in a variety of modes (mixed, on the jobs assessment only, TAFE supervised workplace training)
- General access courses through TAFEPLUS
- Customised courses
- Consultancy in workplace competency and workplace training
- Course design and development; assessment and recognition

In some cases BDUs have a perception there has been pressure on public sector agencies to move away from using public training providers.

Program Managers and Senior/Head Teachers

Public access courses specifically designed for public sector employees in areas directly related to their occupation. Traditionally public sector employees have been given off the job training in TAFE NSW through apprenticeship training, training in licenced and highly regulated areas. Program Managers identified the following course areas where TAFE NSW has traditionally provided public access training for public sector employees in areas directly related to their occupation:

- Apprenticeships and Traineeships
- Fire Technology
- Health and Building Surveying
- Library Services
- Local Government
- Meat Industry
- Water and Waste Water.

Senior Head and Head Teachers

A significant decline in the recruitment of apprentices in the public sector over the last 5 years e.g. signwriting, carpentry & joinery, painting & decorating and parks & gardens indicated a significant reduction in public sector apprenticeship enrolments.

Traineeships with significant public sector enrolments have included Health Support Services, Public Administration and Office Skills. However, unlike apprenticeships, traineeship funding and target areas change frequently.

Increased participation rates in Fire Technology, attributed to flexible delivery arrangements negotiated between TAFE NSW and the industry under a Heads of Agreement. Sydney Institute of Technology ran a Public Access Course for students interested in gaining employment with the

Fire Brigade. This was the first course of its kind, all training having previously been for employees of the fire industry only.

TAFE NSW is the only state retaining a combined Environmental Health & Building Course and this has attracted some distance enrolments from other states. Recent deregulation of building assessment in NSW is expected to result in more contracting out of building inspection work which will impact on student profiles. Library courses have maintained enrolments from the public sector, particularly local government.

Local government certificate courses have consistent and growing enrolments in some metropolitan and non-metropolitan institutes. These courses are offered on a mixed public access and commercial basis. The certificates are targeted to operator level employees and are an identified industry priority, under a Memorandum of Understanding with TAFE NSW.

Meat inspection courses no longer have public sector employee enrolments due to the privatisation of the Australian Quarantine Inspection Service (AQIS). Employees from private companies enrol to meet regulatory requirements and some students seeking employment in the private sector are enrolling in modules from the course.

As a result of increased privatisation of waste water treatment, enrolments of students from private companies has increased. When water management was solely a public sector responsibility all TAFE NSW enrolments were public sector employees.

Contracted Training for Public Sector Agencies

The Navy and the Department of Health have a contract in enterprise specific training with TAFE NSW to provide customised training for their personnel over a number of years. These contracts are the result of contracting out significant parts of in-house training. This training was previously provided by the organisations themselves.

TAFE NSW is a preferred provider on a state public sector list of providers for training to employees at State, Local and Federal level. ESDs and BDUs provide contracted services to government agencies that are smaller scale and do not require a TAFE wide response.

Program Managers identified the following *public access courses* where employment in the public sector may follow completion: Biomedical Studies, Child Care and Human Resource Management

In 1995 a majority of students were public sector agency employees. The majority of students in Biomedical Studies are now studying full-time and complete the qualification prior to employment. Traditionally, TAFE NSW provided part-time delivery for students in employment. Surveys of students in remaining part-time courses revealed that up to 70% are employed by public sector agencies, mainly public hospitals.

Program Managers reported that the industry does not have a simple private/public mix because of the not-for-profit sector which is a significant operator in the industry. Recent Federal Government decisions on fringe benefit taxes and subsidised child care places may impact on future demand in the industry. State risk management strategies in the area of child protection ñ child care employees will need to be over 18 years of age ñ will impact on TAFE NSW selection procedures for courses. TAFE NSW recruited full time teachers in Child Studies consistently over a number of years, but with contracting budgets in Institutes recruitment has slowed despite unmet demand for places.

Human Resource Management was the only course area not specifically designed for the public sector, identified by a Program Manager as having significant participation by public sector employees. More than 60% of public sector employee students surveyed identified 'help future work prospects' as their reason for undertaking study. None of those interviewed stated the course was directly related to their current occupation.

Emerging areas for public sector employees

Program Managers identified Catering & Community Food Services, Information Technology, Paramedical and Risk Management as emerging areas. Regulations in food safety area mean new training for ancillary workers in community settings. Health & Community Services are identifying their own competencies and negotiating with TAFE NSW about relevant training. Therefore no S/HT surveys were distributed to Catering & Community Food Services sections because the proposed courses are not on line yet

Discussions are underway with the Health Department in relation to additional traineeships in the Paramedical area eg. Dental Assisting, Orthotics & Prosthetics and Community Audiometry. Indications are that there is a demand for more credentials in these areas, again linked to risk management.

Business sections of non-metropolitan colleges identified introductory courses e.g. Computers: A First Course, as having participation by public sector agency employees. Information Technology was identified by the Program Manager as an enabling technology with potential for growth, Business Development Units (BDUs) stated that competition for business in information technology is strong except in areas which require very specialist and high cost equipment.

Public Sector Search Conference

Several agencies sponsored and supported this conference: Commonwealth Forum of Agencies, NSW Premier's Department, NSW Local Government and Shires Associations of NSW, NSW TAFE and NSW Public Sector ITAB.

The Conference was convened as an initial forum to consider the issues of vocational education and training for and within the public sector. The Conference aimed to provide an opportunity for different agencies to consider how the vocational education and training system can best work with changes facing the public service.

Approximately forty five agencies were represented at the Search Conference with a majority of representation coming from the NSW State Sector. The Public Sector Union was represented as was the National Public Safety ITAB and the Australian Local Government Training Company (National Local Government ITAB).

The conference achieved networking and exchange of information and knowledge, providing strategic advice to the NSW Public Sector ITAB and TAFE NSW on the impact of the restructure and repositioning of the public service and its impacts on staff training and development. There was identification of flexible and tailored models of vocational education and training delivery.

Where to from here?

Partnerships and alliances. In a constantly changing environment partnerships and alliances were identified by most participants as a key strategy to effectively manage change. The culture of the public service is changing from a relatively stable service delivery model to a business management model.

The decrease in entry level training and direct service delivery was highlighted. The continuing demand for strategic business planning and project and contract management was identified. Participants identified that these shifts and significant staff reductions and turnover means that ethics, risk management and accountability have to be actively considered, promoted and developed.

Participants clearly stated that off-the-shelf vocational training could not meet their needs. Negotiated, tailored and customised education and training strategies, initiatives and programs have to be developed co-operatively. This negotiation can be effectively developed as part of a partnership. The partnership is not static and can be with both internal and external agencies. Partnerships may include multiple agencies across all levels of government.

NSW Public Sector VET Plan. The information provided by participants at the Search Conference will be used in the development of the 1999-2001 NSW Public Sector Vocational

Education and Training Plan. The Search Conference information will be supplemented with further consultation in February and March 1998. The plan will be completed by April, 1998 and every agency will be provided with a copy.

NSW Premier's Department competency standards project. The Public Sector Management Office within the NSW Premier's Department is undertaking a project to develop a standards framework for the public service. The framework may include intra and inter organisational standards using quality control, industry competency standards (aligned to national competency standards) and/or public sector specific management and business practice and financial management practice. There is a Steering Committee for the project which includes state government agencies, NSW Public Sector ITAB and NSW TAFE representatives.

Conclusion

This preliminary research indicates, then, several shifts in participation in VET in TAFE NSW by public sector employees:

- A decrease in participation in traditional entry level training i.e. where students are employees, and a filling of class places with 'preparatory' students i.e. those not in employment in that industry area.
- A continuation of VET provision to particular industries where students once were public sector employees but now are private sector employees.
- Increasing credentialism related to risk management e.g. auxiliary health and food workers.
- Outsourcing of some public sector training particularly in areas which require costly technology and/or where risk management is critical e.g. health, fire, often including a partnership arrangement.

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314

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What about the workers? Informal learning in workplace change

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Through discussion of two case studies in this paper, I argue that workplace learning is usefully seen as a contextual and contested activity. I pay particular attention to ways in which workers', in their daily experience of work, learn a discourse of critique and rights.

I believe that workplace education and learning is useful and ethical to the extent that (i) it helps to increase workers' control over production and their share in its outcomes, and (ii) is socially useful and environmentally sustainable. I offer three justifications for this position: first, I am a worker myself, so this is my own interest; second, the overwhelming bulk of literature on education and learning represents the interests of capital, the state and management, so worker-oriented accounts contribute to scholarly pluralism; third, only when production is socially controlled will it shift from its current exploitative and socially and environmentally unsustainable focus on profit and serve the general interest.

A theoretical framework

I have been writing case studies of learning in social action, community organisations and workplaces for more than twenty years. The theoretical framework which has emerged from this empirical research has three dimensions:

- A broad conception of education and learning
- A focus on the relationship of education and learning and collective and emancipatory struggle
- An analytical framework which enables connections to be made between learning and education on the one hand, and analysis of political economy, micro-politics, ideologies and discourses on the other.

Lack of space prevents an elaboration of this framework here. (For this, and more developed case studies of informal learning in social action, see Foley forthcoming). Instead, I will, in discussing two brief case studies, develop an argument about the relationship of experience and learning in workplaces.

The approach I have adopted in this paper has three elements. I begin by 'reading in' a learning dimension to a case study of industrial action in a workplace in the US. Then I draw on interview data I have collected in an Australian workplace over a number of years. Finally, I develop a critique of silence about political economy in the literature of workplace learning.

Industrial action and learning in an insurance company

Costello (1988) examines a strike by female clerical employees of a small insurance company owned by a state teachers union in the US. In the mid-1970's the business of this company grew rapidly. Management responded to this expansion by hiring more clerical staff, moving some staff to a new location and tightening management control over the clerical work process. A time clock was installed, and workers rebuked for being even a minute late. Clerical staff were directed to use a side door and the firestair, leaving the front door and elevator free for management use. A rigid system of lunch breaks was introduced. Supervisors monitored workers' phone calls, issued written reprimands for talking, refused to grant leave for family responsibilities to women workers, and even followed workers to the lavatory.

These changes coincided with the organisation of the workplace by a clerical workers union, which had already found management uncooperative in negotiations over an initial workplace contract. The ill-feeling generated by the harsh management practices led to the emergence of more assertive tactics by workers. During negotiations over a second contract in 1979, workers developed a militant discourse, at the heart of which were notions of workers' and women's rights. 'Management has no empathy or even insight into the problems we, as women, face when combining jobs and homemaking', the workers' newsletter reported. When management interpreted as 'cluttering up the contract' the union's attempt to include in the contract issues relating to 'employee rights', the workers' newsletter explicitly referred to the conflict between the two discourses: 'We, however, are unwavering; our concept of contract language is of equal importance to that of management'.

As the negotiations progressed, relationships between union and management became increasingly confrontational and it appeared that it was inevitable that there would be a strike. Clerical workers used existing friendship networks to spread information about the strike, clandestinely making use of the internal phone and mail systems. At the heart of the women's militancy were feelings of solidarity and a demand that management treat them with dignity and respect. Stories of management indignities were diffused throughout the workplace, making the women more determined. 'When one woman becomes upset, everyone becomes upset', one woman said. 'This feeding off each other was what started the strike'. 'We felt we weren't going to be pushed around anymore', said another woman. 'Management was not acting respectful toward our bargaining team. So we decided to stand up for our rights!'

The women also waged a struggle within their own union, which was dominated by male professionals wedded to formal and legalistic procedures which alienated the female clerical workers. 'The professionals had a technique for talking above the union women's heads', one interviewee commented. 'It gives you the impression that they know more than they do. They dominated'. The women took advantage of a union rule allowing different groups of workers to conduct their own meetings, which the clerical workers then did, using the informal ties and language of their own work culture. As the day of the strike vote approached, all 53 women assembled at a local hotel. When the two male union officials negotiating on the women's behalf reached a settlement with management without consulting their members, the women unanimously voted to strike.

The two-month strike deepened the women's militancy. Freed from the constraints of workplace hierarchy, the women continued to act assertively. On the picket line, popular supervisors were treated lightly, while arrogant managers were insulted and ridiculed. The women wrote songs and chants satirising management. The strike released the clerical workers from their accustomed constraints and enabled them to express their anger at management. As one striker put it, all the women 'got crazy occasionally', they 'got loud and rowdy, held up nasty signs, and said things they usually wouldn't say'. Some of the women also defied their husbands who had demanded that they quit the strike. On warmer days, some of the women brought their children with them to the picket line, an act which, according to one striker, 'management resented because it made them look bad'. And the strikers defied their employer, the teachers' union, by getting the film star Jane Fonda, who was the keynote speaker at the union's annual convention, to work into her speech a statement of the women's grievances. 'What if I told you', Fonda began, to the audience of 5000 teachers, 'That there are 53 women who work for an insurance company, who, like Blacks in the days when they had to sit in the back of the buses, aren't allowed to walk in the front of the building and take an elevator to their offices?', and went on to list the striker's grievances, finishing with: 'And what if I told you that they're your employees'. The union leaders were enraged; for the women it was the high point of the strike, gaining them publicity and legitimising their actions.

After two months, with their money running out, the women accepted a contract which won them some of their demands, including access to the front door and elevator, the firing of three managers and the replacement of a particularly disliked male personnel manager by a woman manager. Looking back, the women felt that their main gain from the strike was learning about their rights as working women. As one woman put it, 'Before the strike I would have done whatever I was told, not thinking I had the right to say otherwise. Now I do realise that...if you are not getting treated equally and fairly, you do have the right to say otherwise...I learned not to be afraid...[Before the strike] I felt like I was stepping on pins and needles all the time...I learned I didn't have to take that anymore'.

But, this like the following case study, is not a simple tale of workers' victory. Over the next two years management introduced new strategies of control which eroded workers' gains. Several strike leaders were promoted to supervisory positions, a psychologist was brought in to gather information about worker and management perceptions, a monthly luncheon was introduced at which workers could air grievances, and training workshops and discussion groups were initiated to facilitate management-worker communication. At the same time, claims processing was made more automated, decreasing workers' control over their work and introducing a machine-based method of measuring worker productivity. By the time of the next contract negotiations in 1982, these changes had combined with high staff turnover, the onset of a national and global economic recession and a national swing to political conservatism, to radically reduce the militancy of the clerical workers. With some of the workers' initial grievances met, some of their leaders coopted, humanistic management practices dividing the workforce, and a new way of monitoring productivity introduced, management had regained its dominance. A strike leader encapsulated the outcome of the struggle for control of this workplace, and the role of competing discourses in the struggle, when she said, 'Ultimately, management could implement work rules around production standards...That would kill us...With the previous [contract] language, management couldn't have done this'.

Learning in a restructuring workplace

A few years ago, as part of an effort to 'restructure' an Australian coal mine and make it more productive, management decided it wanted to foster more positive worker-management relations. In open-cut mines, draglines dig up the earth, and mechanised shovels load the earth on to huge trucks. One day the truck drivers in this mine came on shift to find the local sign-writer painting names on three new trucks. It turned out that the mine management had staged a competition to name the new trucks and a new shovel. The winning entry was 'Snow White and the Seven Dwarfs'. The shovel was to be called Snow White and the trucks named after three of the Seven Dwarfs: Dopey, Sleepy, & Grumpy.

The drivers were taken aback. First of all, none of the workers in the mine had entered the competition, so they were puzzled about who could have won. It turned out that the 'girl in the office' had submitted the winning - and only - entry. But the miners were also irritated that the company, which was continually claiming that it was losing money, and which was supposed to be engaged with the workers in a serious attempt at workplace restructuring, should waste money and time on such a trivial, and obviously manipulative, game. The workers relayed their feelings to the mine manager, who said that in one mine that he'd worked at, the trucks were called after Melbourne Cup winners. To which one of the workers responded, 'I'd rather be called Phar Lap than bloody Dopey'. Another worker told the manager, 'You won't get any harmony by blokes being called Dopey. 'Come in Dopey' on the two-way. How's that going to create harmony?' To which the manager replied, 'Get stuffed' and walked out.

Each of the three truck crews in the mine had a go at the manager about the proposed signs. One crew told the manager that they saw no need to have names on the trucks: 'They've got a number, we're only numbers'. Another crew told the manager that they would refuse to drive the trucks if the dwarf illustrations went on them; yet another crew said they would paint over the signs. Faced with this resistance, management dropped the idea.

Workers' resistant learning

I am interested in this story is as an instance of workers' informal and resistant learning. Behind this story are the histories of a workplace, a class, a community and a nation. Here I can only try to sketch some of what I see as the essential features of those histories, as they illuminate this particular story. The mine concerned, as is common in the industry, has a conflictual industrial relations history. The incident described above took place in the midst of protracted negotiations over an enterprise agreement. Workers did not want any form of enterprise agreement - the system of award setting through a government appointed tribunal had worked reasonably well for miners for many years. The workers in this mine, under massive pressure from the central office of their own union which was pursuing the accommodationist political agenda of the national Labor government, had reluctantly agreed to enterprise bargaining.

The negotiations over this agreement dragged on for three years; the workers I interviewed gave detailed accounts of management bad faith, deception and intimidation in these negotiations. The Snow White story encapsulates all this, and also represents the management as blustering idiots, and in a sense, powerless. This powerlessness has to do with management's inability to seduce or trick miners. At a deeper level - and this is very important in understanding the nature of workplace learning - management failed yet again to make workers into what management wants them to be - compliant production mechanisms. The miners saw through the shallowness of management's ploy, wondered at their stupidity in persisting with it, and delighted in resisting and satirising it. In doing this the workers asserted their own strength and dignity. And in that assertion lies the emancipatory importance of this instance of workers' political learning.

It is useful to mention a few other factors that throw light on this example of workers' political learning. First, the workers in this mine come from an established rural community in which they have strong family and friendship ties. These ties both moderate the miners' militancy but also make them unwilling to trade their social life for increased wages. The workers are attached to a particular way of life, and they fight determinedly, but not altogether successfully, to preserve it. Second, Australian miners, in common with those in other countries, have strong traditions of industrial militancy and solidarity and these workers, despite many of them being relatively new to the industry have been inducted into these traditions. In other words, they have learned the tradition. Third, the sardonic humour displayed in this story and its telling, and especially the delight in seeing a formally powerful person make a fool of himself, is a national characteristic, formed in the nineteenth century, when convicts and then 'free' workers struggled with landowners and other capitalists in the bush and the cities (see Ward, 1958).

Complexities

Yet the situation is still more complex. Workers in this mine, when asked about their perceptions of the process of workplace change, painted a picture of management incompetence. In one example management was said to have offered a redundancy package to fitters. Soon after it was realised that the wrong sort of workers had been let go and 'they had to re-employ fitters and electricians... How bloody stupid can you be?'.

A little further on in this interview this worker spoke in detail about how the mine's work practices, and productivity, could be improved if management listened to workers. When asked how management responded to workers' suggestions, he said there were three sorts of reactions:

> Sometimes they listen to you with a look on their faces like, 'What the bloody hell would you know'. Mainly because they're fairly well educated and they feel that they are the mining engineers ....[Then again] You can come up with some things and they probably listen to you and say nothing about it and 6 months down the track they have done that [i.e. what workers suggest]. But see, it's got to be their idea ... They don't want anyone else to have thought of it... Then you get the other blokes you'll ... say to them, 'Why don't you

> try this?', ... and they say, 'Oh yeah, bloody oath, that's good, we should be doing this'. But [with these people it] just goes straight through. Not really bloody listening.

The worker here is, of course, going beyond questioning the competence of management and is suggesting that managers appropriate workers' knowledge. This is an example of a continual manifestation in the interviews of the workers' awareness that their perceptions and interests and those of management are fundamentally different.

But it would be inaccurate to claim that workers' present a seamless show of solidarity to management. There are many pressures making for 'seriality', or divisions among workers (Metcalfe, 1988: 86-88, 131-2, 166-170). In this mine, union membership, type of work performed, management inducements and workers' age are particularly potent sources of division, as is difference of interest and perception between workers and those who represent them. During a drawn-out process of enterprise bargaining in the mine, workers and their representatives on the workplace committee negotiating the enterprise agreement, continually referred to the difficulties of keeping workers informed about, and supportive of, the negotiation process. Union representatives were said to continually withhold information from their members so as not to prejudice negotiations with management. While workers understood the rationale for this they still found it frustrating. The interviews also revealed deep unease among workers about the whole union and government-endorsed strategy of replacing industry-wide negotiations on wages and conditions with negotiations at the enterprise level. As one worker put it

> This is what frightens me a bit, that everyone's going to have a different bloody agreement. Because we won't be united any more ... So who's going to support one another? ....

Workers' learning

These case studies raise the question of whose stories get told in research on workplace learning, and to what end. The very notion of 'workplace' diverts attention from the relations of production which provide the social context in which workers learn in their day-to-day working lives. Just as workers are omitted from most accounts of workplace life and learning, except as factors which are to be influenced by management's rational strategies, so too there is an almost universal silence on the most significant determinant of workplace relations, the capitalist mode of production. Researchers go to extraordinary lengths to avoid naming this determinant, calling it anything but what it is - some currently fashionable misnomers being globalisation, productive diversity, fast capitalism, post-capitalism, post-industrialism, flexible specialisation, and post-fordism.

Capital's project is to maximise its 'profit', which itself is a euphemism for the extraction of the surplus of workers' labour, which is the bedrock of the capitalist mode of production. There are innumerable forms of surplus extraction, ranging from direct coercion to more subtle devices like skill categorisations, work-teams and various forms of training. Workers invariably resist these attempts. As the case studies in this paper illustrate, these resistances are diverse and complex in their operation and outcome. Documenting them does not itself generate educational or political strategies beneficial to workers. But developing an understanding of what and how workers learn in workplace struggles is integral to the development of such strategies. There is great scope for progressive educators to assist workers and their industrial and political organisations in doing this.

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Organisational models for change implementation

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This paper is a secondary and final product of some doctoral research into how well competency-based-training has been implemented in Australia. It found that CBT has been misunderstood and is largely not practised as the designers intended. This has resulted in vocational educators having been denied the opportunity to give CBT their meaning. In pondering why, the author concluded that the top down nature of the vocational education organisations involved in implementation was a significant inhibiter of the implementation process. This was true for national bodies as well as TAFE colleges/institutes and even training departments within industry. All of them seemed to not understand the nature of change or the problems of implementation. It was the old theme of implementations not working on directions from above. Noting this occurrence, a resulting question is: can an organisational structure be developed in a way that is a better reflection of practical operations that will enable such things as change implementation to proceed any better?

This dissertation accepts there are three sorts of change. The first is brought about by a conscious decision. The second is that which is gradual, a result of the passing of time, the accumulation of events that change the world, where the old remedies and solutions of daily life no longer work. The last is an active response to the second by instigating the first producing a third possibility. Of course our ability to respond to the second form with the third is hampered by the famous 'McLuhanism' where we all go through life looking in the rear vision mirror. We are condemned to a world we can't recognise because we all believe we live in a previous comfortable generation; those mythical good old days.

Just over thirty years ago Marshall McLuhan was becoming popular with his persuasive truisms that were a cross between scholarship and Madison Avenue advertising copy. He coined the term 'global village', predicted the end of privacy, "In the new electric (electronic) age all the walls go out between people." He foreshadowed current unemployment, "When this 'circuit' learns your job, what are you going to do?" He also said the puzzling, that because of the new information society, "We are going to go through the old ritual tribal dance again but this time we are going to go through it with our eyes wide open." This 'tribal dance' meant that as we lose such things as privacy and identity, things would be more transparent, and so it has come to be. For example, the obvious failure of organisations, in business and government, to actually do the job for which they were created, or just not do them very well, which may be worse, has become more obvious.

The colourful Mcluhan model is one way of explaining how changes affect the world and in turn how we are impervious to these changes to the point where we are numb to them. We respond by inventing neat solutions to these problems we can't understand and by the time someone does figure out what is going on it's too late. We therefore go through life being confronted by a continuing riddle of defining reality. Beckett (1997, p3) explains the conundrum this way:

> Consider, in this respect, the following statement by Elliot Eisner, in the Enlightened Eye: Qualitative Enquiry and the Enhancement of Educational Practice (1991):
>
> How can we ever know if our views of reality match or correspond to it? To know that we have a correspondence between our views of reality and reality itself, we need to know two things. We need to know reality as well as our views of it. But if we knew reality as it

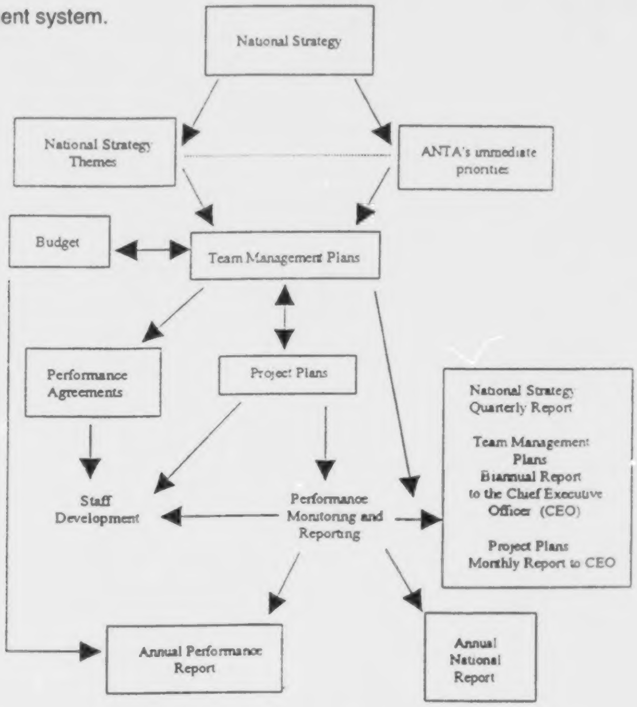
> really is, we do not need to have a view of it. Conversely, since we cannot have knowledge of reality as it is, we cannot know if our view corresponds to it. (45)
>
> ... Surely we would need a way of knowing that it was reality we knew, and further, that we would maintain a view of it, but to know it to be a true view. Viewing reality directly is nonetheless still a view of reality, not a dispensable phenomenon.

To conclude, Beckett uses the concept of us being in a swimming pool to describe how we can measure or know reality.

> ... To clinch the point, and work the 'pool' metaphor a little: we may claim all humans are swimming in the pool of experience (different strokes for different folks, we raffishly say), but the size and depth of the pool is 'given' to us only through our perpetual immersion in it. Far from being contentless and arbitrary, our experience will be given by the context that is by circumscribed fluidity. We know and can be committed to no other.

How can the above be applied? If we assume the pool metaphor is what we are all 'in' how do current organisational constructs fit? And if there is difficulty in defining reality how do we make anything work? Then there is the more difficult question how do we introduce change to make things work better. Or are we forever doomed to be trapped by the McLhuhan/Becket et al predicament. As an example of coping with reality, here is a model of how ANTA in 1994-95 saw itself operating.

Figure 1. ANTA's work management system.


National Strategy
National Strategy Themes
ANTA's immediate priorities
Budget
Team Management Plans
Performance Agreements
Project Plans
National Strategy Quarterly Report
Team Management Plans Biannual Report to the Chief Executive Officer (CEO)
Project Plans Monthly Report to CEO
Staff Development
Performance Monitoring and Reporting
Annual Performance Report
Annual National Report

It should be noted that this type of diagram is almost a universal way of graphically describing an organisation and its functions. ANTA has not been singled out as some sort of bad apple; it is simply the way that organisation does things is central to current national policy and practice of vocational education, and is therefore of our professional concern.

The diagram graphically reveals what I believe to be the major cause for the non-implementation of change, in this case CBT. First, the diagram is a simple top down two-dimensional model in which staff development has been placed near the bottom left hand corner. This seems to indicate a lowly position, which this activity must have had in the minds of the Authority's bureaucracy. It does not rate its own box to graphically enhance its status to that of the other components. The relationship between the areas of Performance Agreement, Project Plans and Performance Monitoring and Reporting is not explained. In addition, there is no reporting line for the effects of staff development, which I take for, granted is teacher/trainer staff development.

Graphic illustrations should clarify what is difficult to describe by text or other media. This figure is almost meaningless. Its bold arrows racing in all directions have more to do with the limitation of computer graphics than the reality of the organisation. It is a political illustration, describing power and is typical of many graphic explanations originating from ANTA the NTB and countless organisations before them. On the other hand, it is obtuse to the vocational education practitioner. It gives no hint as to how successfully the organisation was working at the time. In particular, it does not consider or concede that the organisation is made up of people and it is their relationships, which make the organisation function concurrent with a hierarchy that may not resemble the official version at all.

A useful organisational model

How do organisations really work? Patricia Rogers (1994, pp 5-7) noted in her PhD study with some unease how the Australian organisations that were the host to her research did not behave in any way relevant to textbook practice. They also did not act in a way, that would allow her to satisfactorily deal with her topic.

Organisational culture can be described as being composed of two parts: organisational people and organisational phenomenon. Both of these entities when divided into smaller components can be expected to influence day to day functioning as well as the introduction of something new to an organisation whether it be an evaluation, or a change of some sort. These people and phenomenon are described here:

Organisational People. i. Managerial Hierarchy.

The senior members of an organisation always tend to have a unity of purpose. They are generally always rational, think globally and rarely understand the problems of those beneath them. When it comes to the implementation of something like a new policy, managers always see it as a process of hierarchical delegation. Policies are broken into objectives, which are turned into responsibilities and finally tasks for those beneath them. These tasks, when they are given over to people at the operations level- the street wise bureaucrats (see below)- are permitted to be interpreted liberally so long as they appear to fulfil the objectives of the hierarchy. The success of an implementation will be judged by how well it agrees with the organisational policy, structures, operating strategies, and 'the big picture' view, as perceived by the management hierarchy. In other words, senior management is only concerned with ends. In the context of vocational education this level of person includes senior college, or industry management and up through the ANTA bureaucracy.

Many of these managers were once in-class teachers (in the case of TAFE) who taught in the 1970's and recall it as a golden time of vocational teaching and resource rich growth. These people have little concept of current teaching conditions. If these managers are from industry, they may have no teaching background and acquired acquired the training department as an area of their jurisdiction either by promotion, organisational reshuffle or as a company response to the old Training Guarantee Act. They are used to being decisive, with a single focus: the company.

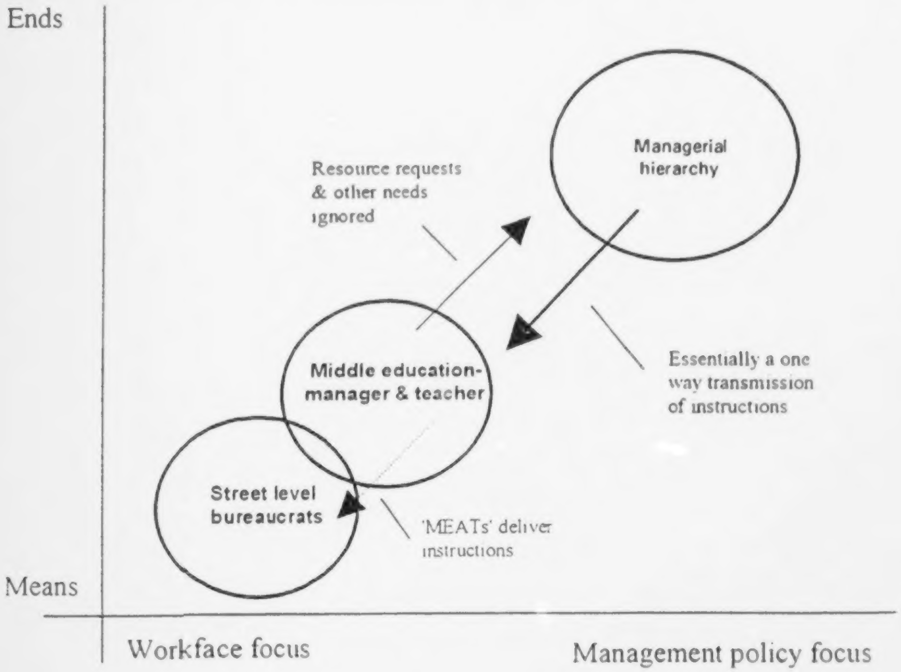
Organisational People. ii Street Level Bureaucrats.

This term was used by Rogers in similar way to that of Lipsky (1980) in that street level bureaucrats are concerned with creating the means of putting the directives of the hierarchy in place. In the case of this research it includes departmental heads, teachers, trainers or others who specifically have to turn the directives of the managerial hierarchy into practical outcomes. They develop coping routines for achieving the goal of implementation to outwardly meet the desires of the managerial hierarchy or their perceptions (Holdforth 1997, p. 4). Street level bureaucrats tend to be unsupervisable and are not often promoted. They have a niche in the organisation, and that is where they remain.

Street level bureaucrats are special, and taking on this vital facilitative role depends on their inclination as an individual, and the need of the circumstances in which they find themselves. They also appear to be reluctant volunteers and seem to believe in a mythical set of rules that have to do with achievement, purpose and social improvement.

There is an additional player whom I discovered during my research into CBT. These people sit between management hierarchy and the street level bureaucrat. This type of person I have whimsically dubbed as MEAT (Middle Education-manager and Teacher). People who make up this group are a bit lost. They are classic middle managers and tend to be department heads. In the current vocational education climate they are often 'dropped' upon with policy or decisions which must be put in place. They have to represent themselves and the needs of their department to the hierarchy, particularly on the matter of resources, often failing to achieve a satisfactory result. It is difficult for them to be anything more than messengers for street level bureaucrats to and from the hierarchy. Figure 2 below is a graphical development of this model.

Figure 2. A How organisations appear to work as suggested by CBT research


Ends
Managerial hierarchy
Resource requests & other needs ignored
Essentially a one way transmission of instructions
Middle education-manager & teacher
Street level bureaucrats
'MEATs' deliver instructions
Means
Workface focus
Management policy focus

Implementation phenomena

Conflict and bargaining. Management hierarchies usually assume there will be unconditional participation in any proposed change, believing everyone in the organisation will have a common view of the "prize". However, this is generally not the case, and can be a cause of conflict.

In any organisation, time is not spent in meetings defining consensual goals but in agreeing on issues that will meet the different interests and agendas of critical implementation groups. Such issues usually have the central themes of conflict over scarce resources (particularly staff) and the formation of strategic alliances. Rogers adds a further colouration to this by noting the behaviour of people or groups engaged in these activities:

> ... it will not be presumed that the agreed tactics represent anything more than short-term accommodations to further longer-term objectives (such as increased power and resources), which will probably never be openly discussed. (p. 6)

Change, chance, chaos superstition and ritual are the 'wild cards' in the implementation process. The effect of change appears in two common guises. The first is the occurrence of unpredictable change. This happens when there is an unexpected alteration to the factors of implementation such as the promotion, transference, resignation or even death of a key person. The second guise of change might be an alteration in official policy or the sudden realisation of what official policy actually means, and that perhaps the local perception of an implementation should change.

The perspective of chance will have the form of unintended and unpredicted outcomes. It occurs in the phenomenon that while all the rules and instructions involved in an organisation are carried through, the result is not the one desired or expected. A possible explanation of these unintended events is that the official ideas have not been thought through, or trialed to see if they are practical. Another reason is, there may be exclusive local factors which alter the implementation process in some way, like the age of the participants or the "life conditioning" they bring with them.

Chaos is always to be expected. It is still hard for people to accept that the neat linear Newtonian universe no longer exists, if it ever did. The world is now so complex that when a person or group tries to effect any sort of activity confident of a predicted outcome, the expected outcome will not occur. The exception to this is where great effort occurs, generally at the expense of something else, to achieve a goal. This means almost any process, project or activity can be subject to a number of forces and influences, some of which are difficult or impossible to anticipate, therefore making its planned achievement very problematic.

Superstition and ritual factors (described by Rogers in a seminar in 1994) is such a common occurrence in organisations it is hardly ever recognised as the irrational entity it is because it is so entrenched. Superstition is found in the mystic, bureaucratic procedures eg. formal documentation always being in multiple copies, the notion that committees are mandatory for any process to succeed, and that employees are never to be really trusted which also goes for management. Superstition and ritual are also often mistakenly assumed to be a resistance to change because it can be disguised by its own language, for example:

> it's company/college policy to do it this way.
>
> it's unprofessional.
>
> that's typical of bloody academics.
>
> another Ministry stuff up
>
> why don't they (teachers) get a job in the real world?
>
> things are not the way they used to be around here.
>
> an academic's life is to live with rejection.

The above model attempting to describe how organisations really work was easily extended to explain some of my research. One view why my development may be a truer picture of an organisation rather than the traditional hierarchical one is been described by Argyris and Schon (1978):

> When someone is asked how he would behave under certain circumstances, the answer he usually gives is his espoused theory of action for the situation. This is the theory of action to which he gives allegiance and which, upon request, he communicates to others. However, the theory that actually governs his actions is his theory in use, which may or may not be compatible with his espoused theory; furthermore, the individual may or may not be aware of the incompatibility of the two theories (p. 11).

Traditionally bureaucracies are particularly prone to act in this way which might explain ANTA's past administrative, custodial performance. In support of this Peter Kirby in an address on the difficulties of introducing the reforms/changes to the then 'VET' system said of mid 1980s government bureaucracy:

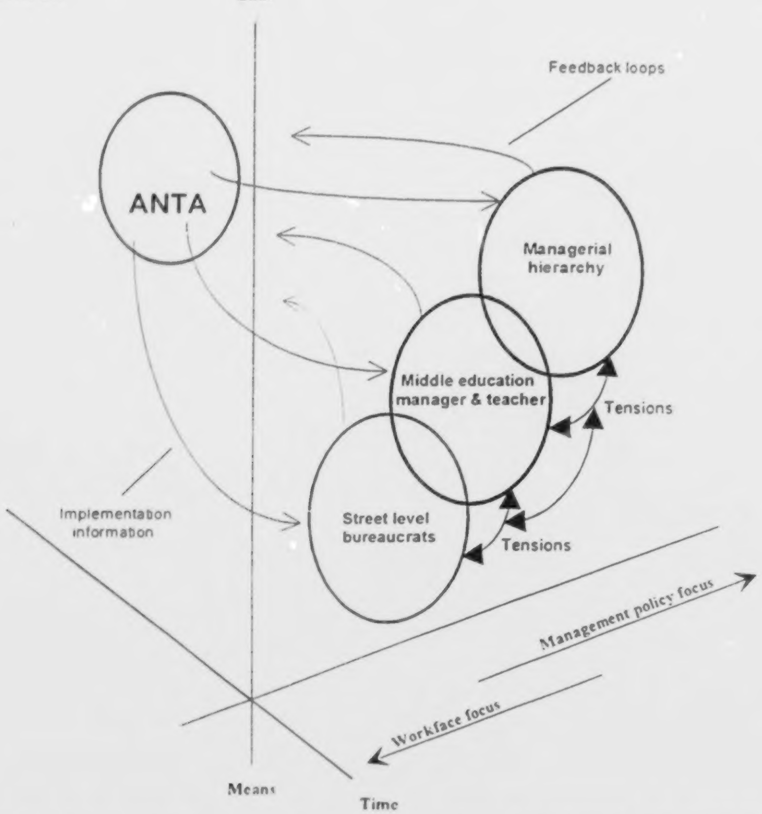
It seemed to us (The Kirby Committee of Inquiry into Labour Market Programs) therefore obvious that, the recommendations that we made, that were likely to prove the most difficult to accept were those that affected the balance of power, which in some way threatened existing vested interest in developing and controlling what was done. And so it proved to be.

It's a standing principle of mine that delegation inevitably, if it is done properly, results in a loss of power, and rationalisation requires, or may indeed give rise to, greater clarity of objectives. Both those things expose administrative performance and bureaucrats are not disposed to exposing administrative performance. (Kirby video, 1988)

This frustration is not unique to Kirby's experience.

The figure below suggests a new way of constricting an organisation that removes the emphasis on bureaucracy, and focuses where the energy to implement change can be applied. It also accommodates the view of Fullan who writes that to change an organisation is to change its culture.

Figure 3. A revised model


Ends
Feedback loops
ANTA
Managerial hierarchy
Middle education manager & teacher
Tensions
Street level bureaucrats
Tensions
Implementation information
Management policy focus
Workface focus
Means
Time

This figure is a redevelopment of the second organisational model (above). I believe it has the following advantages:

- It is not linear.
- It infers an ongoing relationship between internal and external influences in this case ANTA and training providers.
- It introduces the notion of the entire arrangement moving through time and therefore in an Einsteinian sense, everything is constantly changing.

- It is drawn in a three dimensional form and suggests there are more useful ways of looking at things, and that life and social constructions are more complex than traditional, two dimensional, top down structures. Such hierarchies have their origins in a medieval biblical, imperialist view of the world (where everything filters down from above, and those below obey, they are not required to respond.)
- The idea of the diagram is not to do away with what is in place at the moment but re-conceptualise the arrangements between existing bodies. It is intended to build on what has been successful in implementation so far, which in the case of CBT, was an action learning concept (CBT in Action). In implementation practice it means focussing on the points of tension between the spheres (ovals) of interest. It would mean readjustment, and no doubt treading on people's toes, and although it is easy to propose great changes, the following are suggested for the proper implementation of a policy/technology shift like CBT:
- Spend time building vision and commitment. From my research we were at least half way there. But it needs to be bigger and more focussed. There is no need to comment on this further as Peter Senge in The Fifth Discipline (Senge 1993), and others have already done this.
- Spend time and money ending the tension between TAFE teachers and TAFE administrations (a product of TAFE expansion and tough times). This is something outside the scope of this paperut it must be dealt with. It may be handled by establishing the links and acknowledging the tensions shown in the above figure between the street level bureaucrats, middle education manager and teacher and managerial hierarchy. These links mean devolving power and creating communication.
- Spend large amounts of TAFE college staff development money on training core people from each department, in CBT, in numbers large enough to actually become the catalysts originally hoped for by ANTAs National Staff Development Committee.
- Engage teachers to re-write the handbooks and curriculum materials in the user friendly way.
- Build a feedback capacity to ANTA, or any other interested body, into all implementation activities so materials can be enhanced and processes improved.

Apart from national and other political intrigues, these proposals have not mentioned peoples' varied ability to change, adapt, corrupt or misuse something like CBT. The proposals were not written in ignorance of these phenomena. To overcome these social 'givens' I quote Fullan's, 1994 basic lessons for change which might be a good starting point for a serious and thorough re-implementation of CBT. Reading them will not immediately solve the problems, but they may give some insight into useful methods of implementation. They should at least strike a chord here and there, as several points describe phenomenon, which are common in social organisations such as a TAFE college.

The eight basic lessons of the new paradigm

Lesson One: You can't mandate what matters. The more complex a change the less you can force it. 'Policy makers have an obligation to set policy, establish standards and monitor performance. But to accomplish certain kinds of purposes- in this case, important educational goals (like the introduction of CBT. You cannot mandate what really matters, because what really matters for complex goals of change are skills, creative thinking, and committed action.

Lesson Two: Change is a journey not a blueprint. Change is non-linear, loaded with uncertainty and excitement, and is sometimes perverse

Lesson Three: Problems are friends. (Problems are inevitable and you can't learn without them.) This basically concerns the street level bureaucrats, as people in the managerial hierarchy never comprehend the problems of implementation encountered by those beneath them. On the other hand for street level bureaucrats and the MEATs, problems come with the territory. It is their lot to come to terms with and solve (make friends with) problems.

Lesson Four: Vision and strategic planning come later. (Premature visions and planning is blind.) In essence implementation becomes a process of finding out what the innovation seems to be and using the available 'tools' to implement it. If the implementation works then, it becomes codified into a vision by a relieved practitioner who may also develop ideas about modifying the process to make it work better or simpler in future. In this way standards of practice are achieved.

Lesson Five: Individualism and collectivism must have equal power. (There are no one sided solutions to isolation and groupthink.) In the implementation of CBT, Street Level Bureaucrats tried to work out individual meanings but had to fit in with departmental colleagues to give a unified response to CBT in order to satisfy the managerial hierarchy.

Lesson Six: Neither centralisation nor decentralisation works. (Both top- down and bottom-up strategies are necessary.) For CBT this had taken a curious form: management had presented an incomplete model of implementation which street level bureaucrats had modified according to old criteria and then set in place.

Lesson Seven: Connection with the wider environment is critical for success. (The best organisations learn externally as well as internally.) The connection in CBT terms with the wider world was through either TAFE being in contact with industry, which many college participants were, or in the case of industry training departments by having to focus on their industry as it was the reason for continued existence within the company.

Lesson Eight: Every person is a change agent. In the research context each participant had to work at what CBT meant for them by virtue of the paucity of official implementation policy and procedure. Conclusion.

The above is not a panacea for improved change implementation practices. It does however, when taking into consideration both the three dimensional model and the accompanying guidelines, give a better understanding of the real workings (in terms of the Becket conundrum) of an organisation. It does this by giving a practical meaning to the 'pool' metaphor and also the means of perhaps staying afloat. It also is optimistic and promotes a new way of looking at organisations in the interest of getting them to work better.

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Workplace based learning degrees: Critical questions for research

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The character of modern society is so disputed that there can be no straightforward account of the contemporary university or of new offerings such as degree programs based on learning in and through the workplace. Such degrees are now a part of the academy's 'business'. We examine conceptions of workplace based learning, particularly completely workplace-based qualifications including how they have been shaped by government policy and funding arrangements, industry demands for 'greater relevance', managerial discourses that seek optimum efficiencies, and university based pedagogical interests. The emergence of such courses is accompanied by tensions/issues which may not have easy responses but require serious consideration.

What counts as knowledge and knowing in society is witnessing a momentous change. Some call this the postmodern moment (Usher & Edwards 1994), others describe it as a shift from theoretical knowledge to applied and problem-based knowledge (Gibbons et al 1994), and some despair that the fragmented world is 'post-critique' and therefore lacking in any direction that critique might impart' (Barnett, 1997b, p38). It is Barnett's comment that is of particular interest to this paper as workplace based learning degrees do symbolise a shift in emphasis from theoretical knowledge to problem-based 'know-how'. Although workplace based curricula will vary from university to university, faculty to faculty, and workplace to workplace, our concerns relate to what needs to be done to ensure that some critical purchase is enabled; that is, in the age of fragmentation and the pursuit of new markets, critique retains some bite.

As society grapples with increasing and complex change, as economies struggle to maintain competitiveness, knowing about the world gives way to practical 'know-how'. This is no less than 'a fundamental shift in our social epistemology' (Barnett, 1997b, p. 37). It is this change that is reflected in the emergence of workplace based university courses. This change presents universities with a range of critical challenges and it may help to delineate some of the emerging tensions embedded within workplace based learning discourses and advance some suggestions for easing these tensions. First we wish to identify some of the prevalent terms in the various literatures related to workplace based learning as there are multiple representations of workplace-based learning. While this can be seen as a strength of the approach, allowing the development of local particular meanings, it creates messy proliferation of ways of describing similar programs. It is possible to identify common threads in such workplace-based approaches which at least establish shared understandings of the nature of the programs we wish to discuss.

Workplace-based learning programs: Some definitions

A range of literatures seek to explain work based and workplace learning and these terms are often used interchangeably. Some are informed by theories of learning in the field of adult education that relate to reflection-in-action (Argyris & Schön, 1987), critical reflection (Mezirow, 1990), experiential learning (Boud, Cohen & Walker, 1993), self directed learning (Candy, 1991), and independent learning (Brookfield, 1990). Others emanate from the field of cognitive psychology (Billett 1994; Stevenson 1994), and situated cognition (Lave & Wenger, 1991). These theories address the learning that typically occurs by the worker in his/her workplace, and seek to explain how students learn in 'authentic' workplace situations. There is also coverage of this topic in the diverse literatures of organisational development, human resource development, feminism, work and post-industrial sociology. Of course, there are no agreements on the meanings and implications of workplace based learning. Universities have developed a range of programs which seek to capitalise on the learning that takes place in workplace contexts. Such programs include practice based education, cooperative education, and work based learning approaches. We include them here as examples of programs which go beyond the academically oriented and disciplinary based education associated with traditional university education. The first two approaches relate to learning which takes place during a student's placement within an organisation and the role of university student in determining what is learned is primary.

Practice based education aims to prepare students for professional practice using: a curriculum that focuses on problems that occur in practice; examples taken from practice; assessment which applies learning to practice based problems; and structured student experience in clinical, practicum and other authentic settings. In this approach, the university has primary control of the curriculum. This approach may incorporate recognition of prior learning but this tends to be the exception rather than the rule.

Cooperative education is exemplified in sandwich courses (generally undergraduate) where students spend extended periods of time in work placements intended to provide them with experience in particular forms of work which may be practised after graduation. In these instances, the links between the university curriculum and the learning that occurs in the workplace are often unclear.

Workplace learning approaches involve learning in authentic work contexts. The learning that occurs may be described as "informal" (Marsick & Watkins, 1990), emerging from the demands of work rather than pre-determined academic content. The arrangement which facilitates this learning is based on a three way contract between university, employer and student. This approach describes learning which occurs in or in collaboration with an individual's normal place of work. In these approaches the roles of student and employee are blurred. The extent to which a course is workplace based may range from single work based subjects to a complete work based degree. Recognition of prior learning may allow for flexible entry and this may be combined with flexibility of exit. The idea of a complete workplace based qualification (usually negotiated between the university and one organisation) is receiving increased attention in higher education and it is this concept that is the main concern of this paper.

We have chosen to use the term workplace-based learning to encompass the three approaches described above. Despite some significant differences there are a number of commonalities between the learning that occurs in the workplace whether by a student in a formal course engaging in a work placement or practicum or by an employee in the course of performing their regular job. Workplace characteristics, including purposes, culture, structure, systems, work organisation and management, are thus central to the nature and scope of learning that occurs in them.

This raises questions that require careful consideration in any attempts to implement workplace based programs of learning for students: what characteristics of a workplace might represent 'minimum standards' for the implementation of a degree? Are all workplaces suitable? If not, what characteristics (or criteria) would concern the university? How might concerns be raised and what forums ought to exist for conflict resolution? What processes are required to address ethical issues? While these issues are relevant to all forms of workplace based learning they are particularly salient when considering workplace based learning degrees.

The development of an accredited university course in consultation with one organisation to meet the unique learning needs of that company and its employees is accompanied by serious questions relating to the role of the university, the purpose of university education, and ultimately, to whom the university is answerable. We suggest that such questions ought to be paramount in VET research at this moment, but unfortunately they are not. It continues to be questions of 'how to learn more efficiently', how workers' learning can be assessed to fit into industrial relations and managerial agendas, how to 'optimise' skill transfer and so on that continue to dominate. We are not saying here that these are unimportant issues, rather they are questions that need to be located in broad contextual and critical frameworks that do not neglect the emerging tensions accompanying workplace based degrees.

Why workplace based learning degrees now?

The incorporation of workplace based learning into university education has, in part, developed in response to pressures exerted by changing economic times and associated economic rationalist philosophies; changed ideas about the role of universities; and philosophic approaches aimed at increasing the facilitation of lifelong learning. The idea of a complete workplace-based qualification extends the more common practice of university students spending part of their course engaged in some form of learning in the workplace. In contrast to the sandwich program, work experience or practicum where the university plays a central role in setting the curriculum, in workplace-based learning degrees 'work is the curriculum which shapes the entire program of study' (Boud, 1997). This can be seen in various ways: as academically innovative, highlighting the role of universities in lifelong learning; as a way of expanding education 'markets'; or indeed as innovative and market oriented activities.

It would be an oversimplification to suggest that universities are simply passive recipients of 'industry's demands'. No two industries have the same demands and indeed they can have contradictory demands. Universities are also actively bringing about change, often instigating intiatives that are in their own interests. Workplace-based learning programs are emerging as a form of university response to the economic difficulties facing them. This does not mean that they are unproblematic, nor even appropriate or necessary action for all faculties and disciplines. If workplace based learning is to be accepted as a worthwhile component of university offerings, we argue that careful consideration needs to be given to the forms it takes, the ways it is conducted and how learning is assessed. One of our concerns is that unless we examine the policy context in which this movement is occurring, workplace-based learning degrees may not always have the rigour, flexibility and capacity for critique we are arguing for. The following section therefore focuses on several interrelated policy themes that we suggest are worthy of attention from the VET research community, including the pressures on universities to adopt 'more vocational' approaches to higher education. Such pressures are exemplified in the development of new corporate mentalities that accompany the insertion of the 'market form' into higher and vocational education and training.

The new economy

Formal education is permeated by economy. As Marginson (1997, p. 13) correctly points out, education is implicated in economic policy discourse; in strategies for population management; in the preparation of labour for work, and its retraining; and programs for unemployment. The management of education is shaped by economically defined objectives and methods, and increasingly is driven by competitive economic pressures. Carnevale, (1991, p. iii) further argues that what we currently see is the "new economy" where organisations and nations compete not only on their ability to improve productivity but on their ability to deliver quality, variety, customization, convenience and timeliness. This is an economy in which in order to survive and succeed, organisations have to identify and maintain their competitive edge, continually adapting structures and processes to meet ever changing needs. Organisations are using any edge they possess to extend and accelerate opportunities, capitalise on the strengths of individuals in their workforce and equip them to continually learn, relearn and apply what they have learned to changing circumstances. In this environment workplace-based courses represent relevant modes of operating for universities as well as the means of delivering educational programs that meet specific and localised learning needs. They can also represent a means by which universities can achieve their own competitive advantage

This reflects an emerging postmodern culture that includes increasing consumer pressures for choice, flexibility and diversity. Increased choice requires the creation of opportunities for learning in the workplace. As universities seek to develop niche markets there are mounting pressures for diverse means of delivery. In this light, workplace based degree programs are a means of exploiting new alternate sources of students, many of whom may not gain university entrance through conventional pathways, or would not normally see a (traditional) university degree as useful or relevant to their job situation. This provides universities with opportunities to expand potential market share while still improving access to higher education. For instance, for those whose various commitments may have impeded their involvement in higher education. We are however, a little sceptical of this 'emancipatory' agenda as, at this stage, increased access will come at a price as the new courses are most likely to be established as full fee paying. In some cases costs will be transferred to the organisation or employer and thus access to these full fee paying courses will be dependent on one's employment status.

Managerialism in the university

There are numerous challenges being created by the introduction of national goals for higher education. These include changing patterns of enrolment, changes in demand for higher education programs, decline in government funding levels per student, the emergence of market forces in higher education (and consequent need to generate income from other sources), have simultaneously encouraged managerial rationality accompanied by strategic planning. The clear increase in the role of managerialism in educational governance is embodied in the new 'performance indicators', the discourse of market driven education and expectations to perform in pre-determined (competent) ways. The new forms of governance are characterised by greater institutional autonomy, diversity, competition, consumer choice and increased provision of information for the education consumer. This is reflected in the industrialisation of the language of universities — students have become customers and consumers, there is frequent reference to mission statements, strategic plans and teaching as 'curriculum delivery'. The forces of economic rationalism have positioned universities more centrally as players in an education market place and students have embraced the role of consumer — shopping around for customised/flexible courses that best suit their desires.

We are asserting here that the linking of higher education to national economic agendas has provided a pretext for government intervention. Overt government and industry pressures are being applied to universities for them to redefine their roles, become 'more entrepreneurial' and adopt vocational approaches (for instance, see the 'West Review' of Higher Education, 1997). There is an increased community expectation that universities will diversify modes of delivery. While this is usually interpreted to mean an increasing use of communications technologies it is more broadly seen to encompass diversity of delivery and with this comes new ways of thinking about what constitutes 'useful' knowledge.

New ways of thinking of knowledge

As we have argued, formal education systems are playing an increasingly significant role in economic development, requiring states, institutions and nations to look at the 'economics of knowledge'. Universities must reconsider their position in a growing knowledge based information economy. According to Morrison (1995) higher education has to respond to social and economic change by focusing on 'procedural learning' exemplified by workplace based degree programs. Finger (1995) argues that universities must help people and organisations 'learn their way out' of the complex situations they encounter. This represents a more general transformation of understanding of what counts as knowledge — more performative than contemplative ways of knowing (Barnett, 1997a).

Workplaces want knowledge that is going to have demonstrable effects that will enhance productivity, improve economic competitiveness and personal effectiveness representing a shift in focus on skills. Consumer demand is escalating for more operational and instrumental/pragmatic views of knowledge as evidenced in the rapid expansion of profitable private training companies in Australia, the US and Europe. Universities no longer have a monopoly on the generation of definitions of knowledge and must respond to a fundamental shift in how we seek to know the world, our idea of what counts as knowledge and truth.

Corresponding with the shifts in the ways knowledge is constituted is a developing contestation about who controls the curriculum. There is an increased focus on action, and pragmatism. Commonly, questions asked about students relate to 'what can they do?' rather than 'what do they know?' (Lyotard, 1984) This is reflected in notions such as action learning in workplaces, experiential learning, and reflective practice which focus on 'how to' problem solving activities and observable outcomes. Such major shifts in the roles and purposes of higher education are forcing universities to change, otherwise key aspects of their roles will be subsumed by other organisations including private providers and large corporations.

Some concluding questions

At the present time the most common representations of workplace based learning courses involve negotiations between a single organisation and one or more faculties within the university to develop an accredited university course. These negotiations centre on meeting the learning needs of the organisation. The level of involvement of the individual employee varies but in most cases is minimal particularly in the early stages. This indicates an significant shift in focus for universities — away from addressing individual student learning needs — to the needs of organisations. The extent of the match between individual and organisational needs will continue to be debatable. Approaches which emphasise this match would also seem to be based on assumptions about continuous employment that are not reflected in contemporarywork conditions. For instance, what happens when the learner changes jobs or employers? How much of what they have learned (to meet one's organisation's needs) may be transferred between employment situations if indeed the individual is moving to another paid job and not redundancy?

One can readily imagine a situation in which the individual has engaged in a work based course where the nature of the learning is such that he or she can transfer it to a similar work environment. However, a question for research is whether this, or a similar outcome, could have been achieved through a regular university course which allowed the student to use real work examples and apply the content/theoretical knowledge to their workplace setting. The notion of a workplace-based qualification, located entirely in one organisation suggests contextually specific learning. This is why organisations want tailor-made courses. Questions related to transportability of credentials thus arise. In the competitive world of business, organisations want universities that will credential the learning that it (ie. the organisation) sees as valuable. But much organisational knowledge is also confidential — it is that which can give the organisation its competitive edge. Organisations will not always want their knowledge going outside. Many questions remain unanswered here, for instance, what happens when the university gets the opportunity to develop courses for the organisation's competitor? Who controls what happens? What happens when an employee, partially through a workplace based degree, changes employment? How much of their course can be recognised elsewhere? Many of these questions highlight the need for universities to establish clear understandings of how workplace-based programs, what they will contain and how to distinguish different levels of awards. If clarity is not established we suspect such programs will be of limited and short term value.

The development of workplace-based learning degrees has to a large extent been driven by the struggle for universities to create market niches and to claw their share of the education market. Such workplace based courses have the potential to give some universities an edge in the scramble to gain a share of a previously untapped market, namely 'the business organisation'. By creating courses which are taught in-house, often by the organisation, but credentialled by the university, the university can open the door to significant numbers of potential new students. We have argued that the unbridled pursuit of this competitive edge can, in fact, be double edged.

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User choice in markets at risk

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User choice in apprenticeships and traineeships is an important development in the evolution of the Australian training market. It is seen as a means of changing the way the vocational education and training system meets the needs of industry. The research reported here was designed to explore the ways in which this major policy change might impact on the key stakeholders and thus identify the risks involved in its implementation. This paper aims to identify the types of markets in which user choice will work effectively and to contrast them with those that may require some form of government intervention.

The research explored not just the potential short and longer term impact on key stakeholders, but also the mechanisms by which these effects would operate in the context of the wider community in which the training markets were located. This broader concern is often absent from political debate which is conducted and reported in a relatively short time frame and more reflective appraisal left to those who can voice their objects before the deadline for implementation. An understanding of the mechanisms by which a policy will impact has the potential to enable those who implement that policy in ways which will minimise the negative outcomes and maximise the positive outcomes.

Methodology

The research on which this paper is based was undertaken for the New South Wales Board of Vocational Education and Training to determine the likely impact of the introduction of user choice principles on the training market in New South Wales. The authors wish to make it clear that the paper does not represent the views of the Board or its officers.

The research was undertaken in two phases.Phase one included:

- A review of relevant literature.
- The analysis of the Department of Training and Education Coordination (DTEC) APSTATS database with reference to participation rates by industry based on ANZSIC industry divisions and NSW regions.
- A survey of enterprises. The objective of the survey was to gauge industry reaction to the introduction of user choice. Approximately 100 enterprises were included in the sample across all industry groups in NSW. The survey questionnaire was faxed to enterprises.
- Telephone interviews with a cross section of registered training providers throughout NSW and TAFE Directors nominated by the BVET Reference Group. Interviewees were provided with a list of areas to be covered in advance of the interview. In addition, the opportunity was provided for open-ended discussion to draw out issues important to training providers.

The main emphasis of phase two was focus group discussions and interviews with key stakeholders. Focus group discussions in Sydney, Wagga Wagga and Dubbo were used to draw out responses to the main findings from phase one. Each group included representatives of registered training providers, enterprises, DTEC and unions. A background paper was provided but these interviews were otherwise loosely structured. Some additional one-to-one interviews were held to elicit data which may not be provided in a group interview.

User choice and viable markets

ANTA defines user choice as 'the flow of public funds to individual training providers which reflects the choice of individual training provider made by the client' (ANTA 1997: 3). User choice is to be applied initially only to apprenticeships and traineeships. These programs involve off-the-job as well as on-the-job training and are known collectively as contracted training.

If user choice works successfully, it should increase the efficiency of the training market and its responsiveness to the needs of industry by increasing competition. These are potentially significant benefits, but there are risks and uncertainties as well. Some regional and industry markets are at risk of market failure because of limited demand for training and for sparse population. There are a range of situations which may disadvantage equity groups and reduce their rate of participation in training. The often competing goals of equity and efficiency have to be reconciled.

Early in the research it became clear that the analysis of training markets under user choice needed to be approached in a different way. It was found helpful to make a broad distinction between *viable markets* and *markets at risk*. The former consisted of markets where there was no threat to the effective operation of the market, while the latter were markets where the introduction of user choice could threaten their operation. This broad distinction was developed during the research.

A viable market is one in which the provision of training can be planned, organised and managed in ways which ensure that training can be delivered within the constraints of available funding without reducing quality. A market may be viable or robust, viable with some risk, or not viable depending on the ways in which training is planned, organised and arranged. As Table 1 acknowledges this possibility by examining viable markets with some risk.

Table 1 Characteristics of viable training markets

Characteristics of viable markets	Examples of viable markets with some risk
Large number of providers, including specialist providers in some industries and occupations	'Cut-throat' competition may lead some providers to leave the market.
High demand for training and/or area of increasing need.	No significant threats.
Ease of access.	Low barriers to entry in some traineeships areas such as computer traineeships may lead to a proliferation of training providers in these areas while some other areas are neglected.
Cost of infrastructure spread over apprentices and trainees.	No significant threats.
High level of specific support for equity groups.	No significant threats.
Low level of dependency of TAFE institutes on apprenticeships.	No significant threats.
Few lost training opportunities.	No significant threats.
Large enterprises exist able and willing to provide training.	Training may be increasingly undertaken by large enterprise training providers, reducing the viability of some TAFE courses.
Numerous specialist providers.	No significant threats.
Low risk of discontinuity of supply.	No significant threats.

Markets at risk

Viable markets contrast with markets at risk; where is: a risk of failure to provide continuous access to training; risk that some industries will not have access to the specialised training they require; risk of depriving equity groups of specialised local support; or risk of depriving communities of education and training infrastructure.

Thin markets may exist in some industries where there is a low level of demand statewide in specialised trades or traineeship areas. The analysis in this section is based on the APSTATS database which is not compatible with ANZSIC codes. The NSW TAFE Commission profile of enrolment in trade courses 1996 identifies 16 trade areas with less than 50 apprenticeships, including stonemasonry, compositing, blacksmithing, boat building, saw doctoring, toolmaking, watchmaking and footwear. In addition, thin markets are evident in regional trade courses with low demand: marine mechanics, motor cycles, vehicle building, signwriting, drafting, baking, dairy farming, refrigeration/ and airconditioning. Conversely, in regional areas trades in the building or automotive industries are the most robust. Table 2 attempts to clarify the concept of markets at risk with some examples.

Table 2 Characteristics of training markets at risk

Characteristics of markets at risk	Examples of markets at risk
Few actual or potential providers.	Some regional markets may be threatened by closure of a TAFE college or course. Private providers may be reluctant to enter the market.
Low demand for training and/or areas of declining need.	Technological change, changes in industry practices, alterations in consumer taste, downsizing and multiskilling are affecting some trades. See table 1 above for trade areas with less than 50 apprentices.
Problems of access e.g. high costs of travel and accommodation for apprentices and trainees.	This is a problem for rural and remote areas. Not all the required training may be available in regional thin markets. For example, in airconditioning trades the training may have to be completed in Sydney.
High entry costs per apprenticeship or traineeship for training providers.	Specialist trades such as engineering are in this category.
Low level of specific support for equity groups from training providers.	There is evidence that opportunities for equity groups will be reduced in thin markets. Thin markets in building trades exist in several regions. This is also a trades area where ATSI enrolments are higher than average.
High level of dependency of TAFE institutes on apprenticeships and traineeships	Some regions have more than 30% of their enrolments in apprenticeships and traineeships.
Lost training opportunities due to the frequency, mode and place of offering.	In regional markets with limited demand for training and/or sparse population some TAFE colleges may use a two year cycle of offerings at some sites.
Few large enterprises may dominate the training market.	Large enterprises may strengthen the training market. However, user choice may lead to a reappraisal of training arrangements. In some markets this could impact on TAFE if an enterprise that is a large employer decides to do its own training or uses a metropolitan provider.
Single specialist provider for region or state.	Specialist trades such as watchmaking, pattern making or blacksmithing could be affected if training in these areas became uneconomic.
Risk of discontinuity of supply if a training provider leaves the market.	Thin regional markets (e.g. in furnishing trades) may potentially be affected by course rationalisation.

Markets at risk: equity groups

Equity issues are important in the discussion of markets at risk. In the research equity issues were addressed in the survey of enterprises, telephone interviews with private training providers and in focus groups. The telephone survey found that several private training providers have found niche opportunities for providing training that caters for equity groups. Of the 30 interviewed, 15 are planning some action to market their services to equity groups or to strengthen the services they provide. This holds out the hope that private providers will at least augment the public provision for equity groups.

The provision of training and support for equity groups is likely to be affected by the interaction of several forces. Barriers to entry may be high because of, for example, the cost of providing specialist facilities. Equity groups may have little bargaining power over suppliers, especially where the market is thin as in some rural areas. Training providers may lack the expertise to cater for equity groups. In some cases there may be little competition among providers in offering support.

As judged by the survey of enterprises, the only equity groups that are employed as apprentices in significant numbers are people from non-English speaking background and women in non-traditional areas. For trainees a somewhat different picture emerges with all equity groups except women in non traditional areas having substantial representation. Some providers in focus groups also saw equity training as their niche but were constantly plagued by uncertainties about the future of funding. For instance, a provider who specialised in training people with intellectual disabilities was clearly unsure of their future status. The worst prediction articulated was that they would simply disappear from the market entirely.

Markets at risk: rural and remote areas

A further issue in examining markets at risk is the impact of user choice on rural and remote areas. The concept of an open training market is at odds with rural realities, as rural areas have a strong tradition of 'community' and of sharing resources (Butler and Lawrence 1996:7). Rural and remote areas include people from every equity group: these people are doubly disadvantaged (Butler and Lawrence 1996: 2-3). NBEET (1994) points out, however, that some rural areas appear to have a higher take-up of VET even than metropolitan areas; part-time TAFE attendance is higher in non-metropolitan areas than in metropolitan areas, as is the possession of trade certificates. This effect appears to be mainly due to the influence of large rural centres, and underlines the fact that rural and remote areas are not homogeneous with regard to VET access.

There is an underlying tension between the goal of efficiency and the threat this may pose to the viability of local and regional communities. The need to preserve training opportunities in rural and remote areas is important to ensure accessibility for trainees and apprentices and to meet the needs of industry. There was some concern in focus groups that an enterprise or private training provider may decide to undertake training in a regional centre but subsequently find it uneconomic to continue to provide training. The scenario was presented that the local TAFE college runs down its infrastructure and cannot any longer offer training in the area vacated by the private provider. This leads to the collapse of the training market in the region. A further issue identified in focus groups was that in thin markets the sometimes huge distances between the accredited trainer and the location of the business with the apprentice or trainee is an impediment to both the employer and the prospective apprentice or trainee. In view of such difficulties, it is evident that care must be taken to avoid any further dilution of VET provision.

A decision model for user choice

A decision model is a means of consolidating aspects of the training market. The elements of the model are training demand which is the basis for classifying markets; filters which separate the markets according to level of risk, and risk management strategies. It is acknowledged that this model is limited to situations in which the level of demand is the starting point for the decision process, which may not always be the case. The decision making model emphasises the need for a careful examination of the context in which the training market is located and the capacity of providers to be flexible in the ways in which they deliver training. This helps to decide whether implementing user choice is in the public interest.

Discussion

This research has helped to identify key implications for the introduction of user choice in NSW. It was found that enterprises were generally satisfied with their current training provider of off-the-job training for apprentices and trainees. However, this satisfaction was registered at a time when both employers and training providers were not always fully informed about user choice. It was appreciated by most stakeholders that it was important to get the balance right between empowering the consumer, meeting the demands of industry, maintaining economies of scale and avoiding the destructive effects of unfettered competition. The research also identified several areas of tension between stakeholders which may be barriers to the smooth introduction of user choice.

Whilst it has been common to categorise training markets according to the number of trainees or apprentices, the picture which emerged in this study was more complex. Many factors other than the size of the training market were found to be important at the local level. In smaller communities the very quality of life was seen to be associated with the level of provision of training, where the training was provided, and who provides that training.

It was found that simply distinguishing between markets at risk and robust markets did not provide a sufficient guide for decision makers. In this situation it is more useful to use the notion viable markets and to acknowledge that markets differ in degree of viability. This view was seen as realistic and contrary to the belief that all thin markets are under constant threat. A viable market is one in which the provision of training can be planned, organised and managed in ways which ensure that training can be delivered within the constraints of available funding without reducing quality. This approach recognises the importance of management in the viability of training provision and the need to consider such things as different modes of delivery, changing the market boundaries, collaboration with another provider, using resources developed by others and increasing the proportion of on-the-job training.

It was difficult to determine all the potential outcomes of user choice for equity groups. Much of this difficulty was due to lack of definite information pertaining to funding and details of how the policy would be implemented in terms of the unemployed. However, most stakeholders supported monitoring the implementation so that such groups were not further disadvantaged.

User choice was seen by many to increase the role of industry and to diminish the role of trainees in the choice of training provider and how, where and when that training was delivered. Some tension between the needs of industry and the needs of the trainee or apprentice seems likely. Trainees and apprentices want portability of credentials, employment opportunities and pathways for career development and further training. Some businesses may want an immediate pay-off and to be cost effective.

Conclusion

The research found that the decision as to whether a training market is at risk or viable with some risk depends on several local factors which need to be considered in a complex filtering process involving a detailed knowledge of the market. The nature of the considerations in the filtering process mean that decisions are best made at the level of the local region, or whole state for statewide markets. One way in which decisions about the implementation of user choice might be made is to take into account the nature of the market. Using this approach, user choice would not be implemented in numerically thin markets but would be implemented immediately in robust markets.

In intermediate markets user choice would be implemented after a short delay, except in cases where a significant concern is registered prior to a nominated date in which case it could be submitted to an appropriate review committee.

This research suggests that the level of risk of introducing user choice will be reduced when: training providers are already experienced in offering appropriate training; training providers have staff expertise and knowledge of user choice; information about user choice has reached enterprises, individuals and training providers; there is ease of access to training, and employer and provider engagement with user choice is high. The paper has introduced the notion of a viable market. This is a counter to the belief that thin markets are necessarily under constant threat. The combination of alternative delivery systems, effective management strategies, strong community support and availability of infrastructure suggests that providers in thin markets can reduce the level of risk.

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Vocational education and training policy and sustainability

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In my paper I will argue that many of the major social and economic phenomena occurring in Australia today are directly linked to activities that are ultimately unsustainable. Further, I will argue that key assumptions driving policy underlying our economic, social, and vocational educational systems are based on an ideology that does not serve Australians well and should be re-examined. I shall suggest that a futures-oriented approach to policy planning which enables the envisioning of possible future scenarios and allows for choices to be made about desirable alternatives, can facilitate the development of policies that drive long-term sustainable social as well as economic development. The nature of work within such a context may well radically change and with it the education and training that is required to prepare people for work.

VET reform and economic policy

I begin this presentation with the proposition that the kind of vocational education a government policy supports is directly related to the work its creators consider important. In other words, debate about Australian Vocational Education and Training policy rests on value systems and ideology rather than some objective measurable reality.

The economic policies of Australian governments in the past two decades have provided the ideological framework for major changes to the Australian VET system. The Labor Government's national agenda for micro-economic reform incorporated policies to restructure vocational education and training through the Training Reform Agenda. The change to a Liberal Government saw an increasing commitment to competition, market mechanisms and attempts to minimalise government intervention as key features of the VET system.

The literature, including documents such as Common and Agreed National Goals for Vocational Education and Training in Australia (1992), Towards a Skilled Australia (1994), ANTA Training Update Seminar Proceedings ANTA (1997), indicates that the Australian VET system has been explicitly based on several significant premises:

That economic growth, driven by market forces with decreasing intervention by government, is essential and the only choice for a viable social and economic system;

That economic growth is dependent upon Australia's success in a increasingly competitive world environment;

That vocational education and training is mainly concerned with improving the skills of the labour force to increase the efficiency of industry and Australia's domestic and international economic competitiveness;

That attending to the forces which support the above will assure a continued high standard of living, prosperity and a desirable future for Australians.

Economics as Ideology

These premises present a particular view of economic organisation and reflect ideological positions which can be challenged on the basis of their underlying values. As Henderson points out

> Today, few will defend economics as a science, since its principles are neither verifiable nor disprovable. Economics as a profession is too often a form of social engineering that is beyond accountability. (Henderson 1996b, p284)

Alternate ideological positions are dependent on alternate world views rather than scientific evidence. Moreover, it can be argued that as with other complex ideological issues, informed critique of VET policies which are based on the aforementioned assumptions, is dependent upon understandings of esoteric and exclusive concepts often beyond the reach of the very people whose lives are being affected by the consequent actions. The decisions by both State and Commonwealth governments to shift control of VET resources to market forces is one such example. The action to reallocate power and responsibility for VET programs to players favoured by the market leaves other stakeholders with reduced access to both resources and the capacity to pursue their alternate interests. Members of the VET sector are being constantly urged to consider the needs of industry as the central determinants of VET programs, the interests of other participants being of secondary importance.

Work, VET and Economic Growth

I would suggest that the kind of work that is recognised and most valued by the policy makers is that which contributes to economic growth and trade expansion. The education and training that is consequently most supported is that which reflects this kind of belief about work. The language of the paradigm describes work in terms of jobs, employment and the extent to which an activity contributes to economic output. Other forms of work are invisible. Brass (1995), has provided a good illustration of this narrow definition.

> In 1993 we made 274,643 cars and made and remade more than two million beds. We gave birth to 264157 babies and grew 16 million tonnes of wheat and 80,364 tonnes of pumpkin. 53649 students completed their final year of secondary education. (Brass, 1995:12)
>
> Under the 'employment' definition of work, which, in economic parlance, is called the Gross Domestic Product,
>
> Making all the cars was work.
>
> Making about one-third of the beds (those in hotels, hospitals, prisons and brothels, for example) was work. The rest were made in places such as our own homes and do not count.
>
> The only people working at the birth of babies were nurses, doctors and pediatricians.
>
> Growing almost all the wheat was work, but only about 60% of the pumpkins.
>
> And none of the students in year 12 were working. (Brass 1995, p12)

These examples raise important questions about who should be rewarded for work and how such rewards should be distributed, again questions based on value systems rather than scientific data, and beliefs and prescriptions rather than empirical facts about social and economic organisation. The examples are also a good illustration of areas of human activity which define peoples lives and contribute to their dimensions of existence but fall outside the scope of this type of economic perspective.

The success of modern industrial views of economic development

The supremacy of policies based on modern industrial views of economic development can be attributed to their spectacular success in the past. David Korten gives us some idea of these accomplishments worldwide.

> Global economic output expanded from $3.8 trillion in 1950 to $18.9 trillion in 1992 (constant 1987 dollars), a nearly fivefold increase. This means that, on average, we have

> added more to total global output in each of the past four decades than was added from the moment the first cave dweller carved out a stone axe up to the middle of the present century. During the same period world trade soared from total exports of $308 billion to $3,554 billion (1990 dollars) ñ an 11.5 fold increase, or more than twice the rate of increase of total economic output. More than a billion people now enjoy the abundance of affluence. (Korten 1996, p18)

Such achievements are extraordinary and as Korten points out -

> This should be a time filled with hope for a new millenium in which societies will be freed forever from concerns of basic survival and security to pursue new frontiers of social, intellectual and spiritual advancement. (Korten 1996, p18)

Failure of Western approaches to human advancement

However two significant areas of concern confront us: first, the pressure on the physical environment by the growth race to maximise production through the use of limited natural resources, and second, the development of prosperous, harmonious, humane and sustainable societies.

There is a growing body of evidence that is seriously questioning the sustainability of economic practices which strive to continue and even increase the rate of exploitation of the world's finite resources. Note, for instance, the high profile Brundtland Commission, the United Nations World Commission on Environment and Development (1987). A groundswell of literature including the work of writers such as Milbrath (1990), Henderson (1978, 1996a), Meadows (1992), Sachs (1992), is challenging the belief that modern industrial civilisation is sustainable and maintains that the notion of continuing economic growth is fundamentally flawed.

A counter argument to these positions, most recently put forward by our Prime Minister, is that there is, in fact, time to gradually adjust our growth policies to sustainable levels before catastrophic consequences occur. The time horizon debate is an important and complex one and often tends not to dispute factual data about whether resources like tropical rainforests and oil reserves, are actually being depleted or whether greenhouse gas emissions are a global threat. Frequently the debate focuses on political or sectional advantage, and is a clash of world views rather than of scientific evidence. The right to exploit scarce resources such as rainforest timber by the countries of the South, is one such debate.

Nor does the spectacular economic development of the previous decades appear to be providing fundamental long term solutions to complex social problems. There are also pressures on social organisation. Even for those of us in the countries which have benefited most, are confronted by a litany of difficulties: the widening gap between the rich and the poor; high levels of unemployment, particularly amongst our future citizens; greater dependence on part-time and temporary jobs; corporate downsizing and re-engineering; the reduction of the quantity and many would argue, quality of public services; the weakening of unions, and a proliferation of courses and credentials, often for jobs that are fast disappearing. There is the great sense of excitement about the technology that can transform our lives but there is also the fear of its possible consequences. The list can go on.

Prospects for the future

What then are the prospects for the future and how do these relate to vocational education and training policy?

The very question suggests an important role for *futures research*. Because of the time it takes for the dynamics of both social and ecological systems to respond to pressures there is a need for policy makers to be forward looking. The human capacity to accurately predict future events has a notoriously bad track record but informed understanding of the dynamics of change and the systemic consequences of a particular world view can present options to policy makers. Indeed futures research is not aimed at providing an accurate picture of the future. Unlike some views proposed by sectional interest groups who predict the future in line with their own particular desired scenarios, the strength of futures research is that it provides opportunities to identify, consider and evaluate a range of feasible, alternate and desirable future scenarios.

Important contributions to futures thinking can be made by enquiry into alternate world views. Slaughter (1994, p23) argues that it is not possible 'to approach the great issues of our time without considering the frameworks of meaning and value which created them in the first place'. He writes of the 'constitutive layer of social, cultural, interpretative processes' beneath the surface of our understanding which are not amenable to empirical analysis and therefore are generally overlooked. Part of the exploration of these processes is 'a well-grounded diagnosis and critique of deficiencies in the Western world view' and 'a more profound view of trends, problems and the grounds of possible solutions'.

Writers such as Capra (1982), Lovelock (1988), Inayatullah (1990) and Wilbur (1983, 1997), who examine the epistemological foundations of industrial and post-industrial thinking provide alternate ways of viewing the human condition. Here are to be found discussions of the nature and limitation of scientific rationality, the recognition of the earth as a living system, the ramifications of ethnocentric cultural assumptions and the value of a transpersonal view of humanity which might be the key to transforming the turmoil of twentieth century societies. These and other re-examinations and creations of world views may provide productive insights into alternate ways of understanding the human predicament.

I venture to say that this kind of discussion is not often, if ever, the bases of VET policy statements. However enquiry based on futures research which does examine the foundations of current thinking, can enable policy makers to reveal the key premises on which their present action is founded and inform them about the consequences of the choices of alternate policies they might wish to adopt.

One scenario that has gained some currency and that is based on the presumption that technological advance will provide solutions to many of humanity's convergent problems, is proposed by analysts such as Jeremy Rifkin (1996). He tells us that we are entering a new phase of human history, one characterised by the steady and inevitable decline in jobs. It is a world of sophisticated computers, robotics, telecommunication and other advanced technologies that will fast replace human beings in virtually every industry. Rifkin predicts an era of near - workerless factories and virtual companies. If we accept that Australian VET policy supports a market view of economic development with the kind of work that this values and the analysts are even partially correct, then vocational education and training solely for the needs of industry would seem to be a limited, short-sighted activity.

This type of futures analysis suggests that there may be a need to revisit the human relationship to work. Alternate definitions of work may provide opportunities for constructing other social and economic structures. Indeed Rifkin's figure of 800 million unemployed or underemployed world-wide prompts the question: If employment as we understand it, is so essential to human existence why (and how) are these people managing to live? What is it in the human condition that perpetuates such life? Other perspectives may regard work as a means of acquiring a livelihood (not simply employment), of reflecting social status, of identity and self esteem, of creative expression. Harman and Hormann suggest a completely contrary view to that of the employment definition.

> Fundamentally we work to create and only incidently do we work to eat. That creativity may be in relationships, communication, service, art or useful products. It comes close to being the central meaning of our lives. (Harman and Hormann 1990, p26)

The MacNeill study into the factors affecting the future of work found that

> The way in which we organise, distribute, value and reward work is fundamental to the way we live and the kind of society which we fashion. It plays a critical role in determining the circumstances of individuals and families ñ their material well-being, their opportunities for meaningful social interaction, their health and emotional well-being; in broad terms their quality of life. It generates particular patterns of social and economic power, of inclusion and exclusion, of privilege and disadvantage. (MacNeill 1995,p1)

These understandings appear to suggest alternate meanings for the core function of vocational education and training. Beginning with the recognition of the place of work as central to human lives, vocational education and training takes on a wider significance. Such a recognition is predicated upon the assumption that human well-being rather than production, is the core purpose of work. Hence VET policy that supports work for employment alone would indicate a limited understanding of the long-term needs of human beings.

Regardless of whether Rifkin's predictions will actually come to pass, the important role of futures research is to lay bear the beliefs and assumptions that underlie the kind of world we might find ourselves in and thus enable us to construct the world we might choose to live in. The dual threats of an overburdened world environment coupled with increasingly socially unstable societies make it even more important that the Australian policy makers closely re-examines the ideology that forms the basis of social, economic and educational policies. The beliefs that may emerge from such a re-evaluation may recognise an alternate view of the human relationship to work, and subsequently drive an alternate policy for VET.

We frequently hear the call for the need to train flexible and adaptable workers. I suggest that there be a similar call for VET policy makers to consider more flexible and creative modes of thinking.

And finally I would pose for consideration several questions.

- What would VET policy look like if policy makers believed that a large proportion of the Australian population will never engage in paid employment.
- Or what if we didn't choose to compete in the international marketplace; economic growth was not considered necessary for Australians to have a satisfactory way of life; the distribution of wealth bore no relationship to paid employment.

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VET and productivity: Some possible lessons for Australia

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The rationale of vocational education and training is that they provide the knowledge and skills people require to successfully enter, and be retained in, gainful employment. But there is little systematic enquiry into how, and by how much, they increase productivity. Valid comparisons can only be made when, as much as possible, like is compared with like, and where as many other factors as possible are controlled for.

This paper reviews a long-term research program undertaken at the National Institute of Economics and Social Research in Britain, that has attempted to do this using micro-level, international comparative studies. In our view the program can inform VET practice and research in Australia, and therefore deserves the attention of the research community and the VET sector as a whole.

Overview of the National Institute's research program

The impetus for the research was work that revealed that the output per German employee had been exceeding that per British employee, and by 1976 was fifty percent higher. Research into a possible educational basis commenced with a comparison of vocational qualifications (Prais 1981). It showed by industry sector as well as overall, that those categorised as having university qualifications or equivalent, constituted about the same percentage of the workforce in the two countries. But the proportions of those with no qualifications, and those with qualifications at the non-professional level, were glaringly different.

Prais and colleagues were concerned to test for a correlation between vocational qualifications of workers and levels of productivity. However, they recognised that it would be only weak evidence for a causal link, if it was not coupled with a plausible explanation of how differences in background are reflected in work practices and why these deliver different levels of productivity. They saw too, a need for soundly based recommendations for action in order to remedy implied deficiencies. It is these endeavours that have constituted the implicit objectives of the research program.

The hypothesis was that initial, pre-employment vocational education is a major contributor to enterprise productivity, since it raises workers' skills, and these are applied through more effective work practices. We see the basic model representing their thinking thus: enterprise productivity results from the interaction of people and technologies. The most effective work practices optimise the use of technologies and facilitate co-operative work relationships. Effective work practices depend on the intelligent and knowledgeable application of skills, which in turn depend on general education and vocational education. On-the-job training builds on and extends work related knowledge and skills.

Inter-country comparisons involved establishments of similar size, producing similar products. Studies compared and contrasted:

- worker productivity (units of output per unit time per person)
- management styles and practices
- technologies employed - plant, equipment, production processes etc.
- workplace organisation

- on-the-job training
- level and type of vocational qualifications of workers
- curriculum content relating to those qualifications.

Comparisons were made between enterprises in Britain and Germany and, to a smaller extent, Britain and the Netherlands or France (Daly et al 1985, Mason et al 1992, Steedman & Wagner 1987, 1989; Prais et al 1989, Mason et al 1994). By minimising cultural factor differences, any recommendations for change would not be dismissed because they would be incompatible with the British way of life.

In every case the average productivity of the British enterprises fell well short of the average of their Continental counterparts. Similarly, the percentages of British personnel holding intermediate qualifications were much lower.

In comparing work practices between Britain and Germany, patterns emerged across sectors. German manufacturing was withdrawing from producing bulk quantities of standard goods while British manufacturing concentrated on large runs of basic quality, identical products. Numerical controlled machinery was in use in both countries, but German countries were more inclined to exploit it to meet individual client requirements. German manufacturers placed greater emphasis on the quality of their supplies and on meeting delivery dates. German workers appeared to be able to perform a greater range of tasks and to move more easily between different functions, allowing production to be more customised. In Germany, machine breakdowns were rare but in Britain they were common. While in some instances the Germans' machinery was newer, the reason for the difference in breakdowns appeared to be elsewhere: shopfloor workers in Germany carried out day to day cleaning and maintenance while their British counterparts did not. The running speeds of equipment were similar in the two countries; but attendance levels in Germany were significantly lower. This did not mean that personnel levels were always lower. Where a product demanded intensive human input, this occurred. Paired product comparisons with the Netherlands and France showed similar differences.

Jarvis and Prais (1989) examined retailing and questioned the amount of preparation provided in France and Germany - in depth and in numbers of students, given the move away from retail customer service. But in 1995 they returned to the issue in relation to quality, concluding that German manufacturers' orientation to the customised, high quality end of the market aligned with customer taste in that country. Retailing assistants' product knowledge both fosters higher taste through better information provision to prospective customers and provides better feedback to manufacturers through skilled buyers.

Prais and colleagues needed to explain an apparent anomaly - the USA. American productivity was known to be the highest in the world. But it was also well known that post-school vocational education, in contrast to degrees, has constituted a relatively small component of the American education system. They found that American precision engineering manufacturers, who indeed had higher productivity levels than the Netherlands or Britain, produced en masse for a large domestic market (Mason & Finegold 1995). While throughput rates were relatively high, enterprises were less efficient than Dutch plants and little different to British ones in tooling and adjusting production. They depended on the large pool of graduate engineers for their technical staff and on training of their more able workers. Many of their personnel were illiterate. The findings suggested that manufacturers of mass produced items, in advanced economies, can at present be competitive in the absence of a strong system of up-front vocational education, if they operate in a large domestic market, are somewhat protected from major sources of cheap labour (eg by distance), use graduates as technical personnel and provide quality training for their most able employees.

Over time Prais and his colleagues suspected that matched products were not always as alike as first thought. Attempting to match on the basis of product description may mislead because the descriptions fail to reflect quality measures. Using local advice on what is low, medium and high quality could also be misleading if notions of quality vary. This proved to be the case and an item thought to be of average quality in Germany was usually judged to be of high quality in Britain (Jarvis & Prais 1997).

Evaluations of the program

The research program has not been without its critics. Cutler (1992) suggested that it appears to have had a predetermined outcome, that relative technological sophistication and better management practices could equally have explained the observations, and that there was no evidence of a need for en masse vocational education as distinct from more selective training at the supervisor level. Shackleton (1995) pointed out that it is impossible to control for factors such as age of equipment, and questioned the suitability of qualifications as a measure of work-related training. Certainly, there have been sociological studies that suggest that cultural factors play a big part in determining workplace roles and relationships (Regini 1995). Germany has been viewed as having high-trust industrial relations, which allow the complex tasks of planning, service and control to be given to production workers (Köhler & Woodard 1997).

Notwithstanding, we consider that the research program has provided the strongest evidence yet for a causal link between vocational education and productivity. Along with other research, it points to the need for synergy - of skills, attitudes, technologies, workplace culture etc at all levels of an enterprise. So, inevitably, there could have been alternative explanations, but more skilled work along with better vocational preparation constituted the recurring pattern. Of course, vocational qualifications are not synonymous with skills. Skills can be acquired informally, and if gained through formal on-the-job training or an institution, they might not be recognised in the form of a vocational qualification. But on-the-job training seldom delivers a broad array of transferable skills. Instead, it is usually brief and relatively specific. However, where there are large differences between the two groups in the proportions with vocational qualifications, it would be highly improbable that there would be counterbalancing disparities in the proportions with unrecognised, institution-acquired skills. Therefore, within the context of the research, we are confident that qualifications have served as a good indicator of broad, work-related skills.

Possible implications for Australia

A workforce that is currently equipped to achieve high productivity, in customised, high quality products would, on the basis of the National Institute research, have similarities in its qualifications profile to those of the Continental countries.

Table 1. Vocational qualifications as a percentage of the workforce

AQF equivalent	≥VI	IV/V	I-III	no post-school quals
Australia, employed persons, 1995	15	10	23	52
Australia, plus unemployed persons, 1995	14	10	22	54
Switzerland, 1991	11	9	57	23
Germany 1988	11	7	56	26
Netherlands 1989	8	19	38	35
France 1988	7	7	33	53
Britain 1989	11	7	18	64

Table 1 compares the composition of Australia's workforce with those reported in the studies. Though Switzerland was not included in the paired product studies, it is tabulated because it will be discussed later. The Australian figures are derived from ABS data for May 1995 (McLennan 1996). The European figures, as reported in the studies, are for the late '80s. The percentage of the Australian workforce with post-school qualifications increased very slightly over that period.

It is apparent that the proportion of the Australian workforce with qualifications equivalent to AQF IV and above compares favourably with the Continental countries. However, when the proportions with lower skills levels and no qualifications are compared, Australia appears to fall somewhere between France and Britain.

Table 2 (see overleaf) shows a breakdown of the Australian figures as percentages without qualifications by industry sector. Except for education, they are high.

Table 2. Percentages of employed persons aged 15-64, grouped by industry (ANZSIC) and qualification

AQF equivalent	≥VI	IV/V	I-III	No post-school qualification
Agriculture, forestry and fishing	4	8	19	69
Mining	10	8	34	48
Manufacturing	8	8	28	56
Electricity, gas and water supply	15	14	32	39
Construction	4	7	45	44
Wholesale	10	10	25	55
Retail	5	5	20	70
Hospitality	5	8	20	67
Transport and storage	5	8	25	62
Communications	7	20	26	47
Finance and insurance	15	10	13	62
Property and business services	26	13	19	42
Government administration and defence	24	10	17	49
Education	51	17	9	23
Health and community services	29	19	18	34
Cultural and recreational services	17	11	16	56
Personal and other services	9	11	31	49

Prais (1993) has concluded that English education has failed the less academic majority in developing technological capability and it is this deficiency that needs to be addressed both at school level and in vocational education. He condemns a school system that he claims devotes time to sketching of design concepts but which hardly ever has students prepare and read engineering-style drawings or construct items to precise measurements. In seeking to foster individual creativity the system has forgotten that initiative and novel ideas depend, for their full expression, on expert control of tools and media. And for people whose work is of a routine nature, skill in interpreting precise drawings and working to specified tolerances is fundamental.

Much of the evidence in support of the claims has been gathered through comparative studies of schools in Switzerland and England. Switzerland was known to be similar to Germany in many respects, with a highly qualified workforce and highly productive industry. Both workforces were educated in systems that employed a relatively traditional, teacher-centred approach, a characteristic Prais concludes to be vital for a technologically competent workforce (Bierhold & Prais 1993, 1995, 1997). But recently, many primary schools in Germany have adopted a more student-initiated experiential style of teaching. As a consequence, the National Institute research turned to Switzerland. Prais has stressed that much of initial teaching of mathematics should be a whole class affair in which the teacher ensures that all pupils participate in doing mental calculations, thereby developing quantitative and problem-solving concepts. As evidence for the claim, Switzerland performed well compared to Britain and Germany in the Third International Mathematics and Science Study (TIMMS) undertaken in 1995.

We believe the emphasis on assisting the less academic learner to be the most important message in the recently published work arising from the research program. Australia, like Britain and the USA, is seeing most of its academically-orientated young people enter degree level studies rather than sub-professional vocational education. Those who will be employed in positions requiring intermediate qualifications will seldom be the academically high achievers.

Table 3: Percentile estimates (± standard errors) of student achievement in the 13-14 year-old group in the Third International Mathematics and Science Study 1995

Percentile	Fifth*	Twenty-fifth**	Fiftieth
Australia	372 ± 4 (88)	460 ± 2 (69)	529 ± 7
Switzerland	401 ± 6 (84)	485 ± 2 (64)	549 ± 6
England	361 ± 9 (82)	443 ± 5 (58)	501 ± 4
Germany	368 ± 8 (80)	448 ± 9 (58)	506 ± 6
France	415 ± 5 (69)	484 ± 1 (50)	534 ± 3
Netherlands	397 ± 11 (80)	477 ± 9 (66)	543 ± 9
USA	356 ± 4 (79)	435 ± 3 (59)	494 ± 6

*Figures in brackets are the differences between the twenty-fifth and fifth percentiles.

**Figures in brackets are the differences between the fiftieth and twenty-fifth percentiles.

Table 3 lists the scores at the fifth, twenty-fifth and fiftieth percentiles in TIMMS gained by the group of students predominantly aged thirteen in Australia and the countries included in the National Institute research (Lokan et al 1996). Prais contends that a long 'tail' is evidence that an education system is failing low achievers by not taking steps to assist them to keep pace, with the result that they will cognitively drop out with respect to numeracy. We therefore calculated the differences in the percentiles as shown in brackets.

While the scores of the lower achieving half of the age cohort of Australians are about mid-range of the group listed, there is a relatively large spread. Different proportions of non-participation may be reducing the spread for some countries more than for others. Nevertheless, the matter warrants further examination.

In keeping with the need to develop technological competence, Prais (1991, 1993) stresses the importance of rigorous assessment, if employers are to have confidence in the skills of those being granted vocational qualifications. Written examinations must be used along with practical testing. Practical tests alone cannot examine effectively for conceptual understanding, and are an inefficient and costly way of testing for skills such as quantitative capability.

In Australia, there is a risk that current trends toward enterprise-based assessment will be coupled, in many instances, with a total reliance on practice-based testing of routine tasks. Furthermore, there is a risk that the costs involved will result in inadequate assessment being undertaken, rather than cheaper and educationally valid methods being used. Indeed, written testing for some learning, makes holistic competency assessment in complex tasks more practicable.

We are not endorsing 'a return to basics'. Rather, we infer from the research that, in the pursuit of creativity, interpersonal skills, inter-cultural awareness etc., there has been a risk that cognitive and technological skills are not adequately developed. The research findings imply that they are vital to the country's economic future.

Some other recent studies have examined the issue of the relationship between work practices and productivity. Black and Lynch (1997) in the USA studied three thousand manufacturing enterprises. They found that productivity levels depended, not just on work practices, but on how they were applied. Workers needed to be encouraged to think and interact to improve the production process; the greater the proportion of workers who used a computer, the more productive the enterprise. Educational backgrounds mattered. In a European study across industry, Kersley and Martin (1997) conclude that communication in the workplace is causally linked to productivity increase. Workers needed to be comfortable with initiating ideas and contributions, and the environment one that encouraged rather than demanded participation.

The studies complement and extend the National Institute findings by emphasising that setting affects skills expression, interpersonal and technological.

Conclusion

We now revisit the putative model so that it reflects the findings and ideas discussed, and attempt to put it into a context consistent with Australia's circumstances. The model sets out the following factors:

- the contribution of worker skills to achievement of high productivity levels in good quality, customised products and services
- the importance of mathematics, science and technological studies in general education as a basis for vocational education and employment
- that both vocational education and on-the-job training may combine workplace-based and non-workplace-based learning
- that vocational education can be undertaken either pre-employment or during employment and may be undertaken many times throughout life
- the importance of broad skilling and adequate assessment of underpinning knowledge and conceptual skills in vocational education.

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The impact and consequences of markets in VET: Research evidence, issues and dilemmas

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Over the past decade or so, the VET sector in Australia has undergone radical and far-reaching reform with the stated aim, inter alia, of establishing an open and competitive training market. Financial and regulatory arrangements in the VET sector have been restructured and reorganised according to the principles of 'choice' and 'competition' with major implications for the manner in which VET programs and services are developed and delivered. Policy reforms affecting the supply and demand sides of the market have instigated a dual process of institutional redesign and cultural renorming that has progressively transformed the material conditions and social relations that shape the nature of production, distribution and consumption processes in VET. Changes of such magnitude and significance are necessarily reconfiguring long-established patterns of VET provision, participation and outcomes in unprecedented ways. Such effects are in turn having both intentional and unintentional consequences in social, economic, educational and political terms.

One of the major unresolved debates in the VET policy community concerns the efficacy of market reforms. This debate is deeply polarised between two groups who advance diametrically opposed arguments about the actual impact and likely consequences of market reform in VET. On the one hand, the advocates of market reform contend that increased choice and competition will increase efficiency, responsiveness, quality, flexibility and innovation in VET (see for example ANTA 1996). The Australian National Training Authority (ANTA) acknowledges that such benefits will be accompanied by costs, specifically higher information and transaction costs and a more complex operating environment. But it argues that 'these costs will be of a short term nature and should not detract from the improved longer term viability of a competitive training market' (ANTA 1996).

Conversely, market critics are doubtful whether a competitive training market will produce the range of benefits that advocates claim. Even if market competition improves efficiency and client responsiveness, they argue that it is also likely to have adverse social, economic and educational effects. In balance, they suggest that the negative consequences of competition and market reform are likely to outweigh any positive gains (see for example Anderson 1995a, Fooks 1995, Gonczi 1996, Kell 1993, 1995; Miller 1997).

In a review of research literature prepared for the National Centre for Vocational Education Research (NCVER), Anderson notes that 'at present ... there appears to be insufficient empirical evidence either to support or refute claims that increased competition in the training market will produce a wide range of benefits not otherwise possible' (Anderson 1997a, p4). In a subsequent and more comprehensive 'stocktake' of research on competition and market reform in the Australian VET sector, Anderson concludes that available research and data suggest that the economic benefits of competitive markets 'may be outweighed by adverse social, economic, educational and political consequences. Before a final verdict can be delivered either way, there is a need for further investigation of the impact and consequences of the full range of competition and market reforms in the VET sector' (Anderson 1997b, p63).

This paper reviews the research evidence analysed by Anderson (1997b) in reaching the above conclusions, and identifies some of the conceptual dilemmas and methodological issues involved in evaluating the impact and consequences of market reforms in the VET sector. By way of conclusion, the paper poses a challenge to researchers in VET.

Social impact and consequences

Critics argue that markets in VET are inherently inequitable and that market reforms have exacerbated existing social and economic disadvantage. For instance, Kell argues that the first wave of corporate managerialism and market-oriented reform resulting from the Scott Review (1989) of NSW TAFE led to the systematic marginalisation of access and equity programs and services. Lundberg & Cleary (1995) find that the mainstreaming of access and equity initiatives associated with market-based approaches to VET provision has 'provided a smokescreen for the dismantling of uncomfortably specific equity measures' (Lundberg & Cleary 1995, p14). They conclude that 'there is likely to be a deterioration in the fairness of access to, and participation in, vocational education and training as the provision of education and training services becomes subject to more competitive market pressures' (Lundberg & Cleary 1995, p71).

In an analysis of access and participation rates in TAFE over the past two decades, Powles and Anderson (1996) find that gender and socio-economic disadvantage have been exacerbated by recent training market reforms. The demise of access courses and the emergence of selective admissions, credentialism, and increasing costs to students were found to have compounded longstanding barriers to participation by women and disadvantaged groups. The increasingly peripheral status of access and equity goals in VET is linked to the recent preoccupation with economic objectives and market mechanisms. They conclude that if the balance between the social and economic objectives of VET policy continues to tip in favour of the latter, 'it is likely that an accumulation of current trends will evidence further shifts within TAFE to the disadvantage of the socio-economically under-privileged' (Powles & Anderson 1996, p124).

Golding & Volkoff (1997) argue in a report on barriers to participation in the VET sector that increased choice and competition within a market framework favours the relatively advantaged and reduces equitable access and participation for disadvantaged groups. On the basis of extensive interviews with disadvantaged client groups, they conclude that 'while some user groups are in a position to make a market choice of a provider on the basis of their ability to pay, many others have no real choice and are allocated to a provider on the basis of their inability to pay. Those persons in the most disadvantaged groups have the least choice and the lowest propensity to pay' (Golding & Volkoff 1997, p18).

Market advocates generally concede that market mechanisms such as fees and competitive tendering may have an adverse impact on access and equity. Selby Smith accepts that 'open and competitive processes are not always consistent with the "public interest" objective' (Selby Smith 1995, p11). She acknowledges that the capacity of TAFE institutions to address equity and social justice issues may be eroded in a more competitive and open market. In its review of the National Training Reform Agenda, the Allen Consulting Group (ACG) identifies a number of perceived weaknesses relating to access and equity, including 'the risk that more user-pays approaches to training may systematically exclude those with low or no incomes' (ACG 1994a, pp29-30). ACG (1994b) notes that the pressures of market competition on TAFE providers in disadvantaged areas may aggravate existing socio-economic inequalities.

Studies of the impact of specific market mechanisms tend to suggest that access and equity in VET has been adversely affected. In a review of research on the social effects of fees and charges in TAFE, Barnett (1994) finds evidence of declining participation rates among women and disadvantaged groups. A lack of commitment among private providers, combined with the high levels and selective effects of fees, are identified by Anderson (1994) as the principal barriers to access and equity in the private training sector. As a result, 'increased government reliance on private providers may lead to greater inequalities in access to and the distribution of training opportunities' (Anderson 1994, p202). In a subsequent study which confirms these findings, Barnett & Wilson (1995) warn that current policy trends suggest that there will be 'a segmentation of the public and private sectors, with disadvantaged groups being able to access public training resources and not those of the private training sector' (Barnett & Wilson 1995, p xiii).

Overall, the findings of research on the social impact of competitive funding processes have been divergent and inconclusive. In a study of competitive tendering processes in the training market, the Western Australian Department of Training (WADOT 1995, 1996) finds 'little evidence' of any adverse impacts on access and equity. Conversely, research for the National TAFE Education and Student Services Standing Committee found that the quality, level and accessibility of TAFE support services for disadvantaged groups had declined as a consequence of competitive tendering processes (Anderson 1995b). The latter findings support Lundberg's contention that competitive funding processes place training providers 'under economic pressure to marginalise any disadvantaged students who cost more to be trained or who require additional capital or recurrent outlays for support' (Lundberg 1994, p8).

Initial research on User Choice suggests that its strong enterprise focus could marginalise access and equity considerations unless preventative steps are taken. Selby Smith et al state that 'encouraging a commitment to access and equity by employers, employer groups and private training providers remains an important issue requiring resolution if the potential of User Choice to improve access and equity is to be achieved' (Selby Smith et al 1996, p17). Other issues requiring attention include the need to ensure that employers and apprentices/trainees can exercise choice on an equitable basis; avoid 'over-customisation' of training programs; and provide access to adequate support and information for disadvantaged clients.

Economic impact and consequences

The principal benefits which advocates claim will result from a competitive training market are economic, specifically greater efficiency and responsiveness to client needs. By raising awareness of the value of training qualifications, the market reforms are also intended to generate a training culture in industry, and to stimulate greater industry investment in training. Market advocates argue that achievement of these policy objectives in tandem will enhance the national skills base, thereby improving the productivity and competitiveness of enterprises and increasing employment opportunities for individuals (ACG 1994a, 1994b; ANTA 1994, Deveson 1990, Sweet 1993, 1994).

No empirical evidence exists to support claims that supply-side market reforms have increased either efficiency or responsiveness in the VET sector. As ACG notes:

The reported results of the reforms to date invite more critical analysis. Many are descriptions of activities rather than results which demonstrably contribute to stated or fundamental objectives. For example, it is not clear if the introduction of open tendering (has) improved efficiency and responsiveness (ACG 1994a, p15).

Available research suggests that competitive tendering processes have probably reduced the purchase price of publicly funded training (ACG 1994a). Beyond making training places cheaper for government, no other cost savings can be isolated on the basis of existing research. Moreover, available research suggests that any potential efficiencies may be negated by supply-side transaction costs arising from tender administration, provider recognition, performance monitoring and marketing (ACG 1994b, Anderson 1994, Kell, Balatti & Muspratt 1997, WADOT 1995, 1996). ACG argues that the level of transaction costs associated with competitive funding processes 'may be the most important reason for maintaining an area of non-market (public service) provision' (ACG 1994b, p210). However, WADOT notes that 'little cost/benefit analysis work has been done in relation to competitive training market processes, even in a strict cost efficiency sense' (WADOT 1995, p25).

The research literature identifies several other effects of competitive tendering processes with potentially negative economic consequences, including: cost-shifting and substitution of public for private resources; confusion and instability in planning and resource allocation processes at the system and provider levels resulting in mismatches of supply and demand, potential duplication of effort and consequential inefficiencies in resource utilisation (ACG 1994a, Anderson 1994, WADOT 1995, 1996; Wiltshire 1997).

Industry investment in VET does not appear to have increased as a consequence of increased competition and market reforms. ACG finds that supply-side reforms have resulted in only 'marginal changes in the balance between public and private funding of vocational education and training' (ACG 1994a, p31). This conclusion is supported by national financial data for the public VET sector which shows that although there was an increase of 2 per cent between 1994 and 1995 in the relative proportion of revenue from non-government sources as against recurrent expenditure by government, most of this was accounted for by increased income from student fees and charges rather than industry training contracts (Anderson 1997c). Recent data analysed by Burke (1997) indicates that industry investment in workforce training is also declining. Overall, available research suggests that supply-side competition and market reforms have not yet created a genuine training culture in industry (ACG 1994a, Teicher 1995, Wiltshire 1997).

Less research evidence is available on the economic consequences of demand-side market reforms such as User Choice due to their relative novelty. Coopers & Lybrand (1996) suggest that User Choice may lead to greater efficiency in the utilisation of human and financial resources in both firms and the public training system. But equally, it highlights potential inefficiencies arising from: underutilisation of public training resources; unnecessary duplication; and a commitment of resources to marketing and competition rather than educational development and delivery. Cost-shifting and substitution have also been identified as potential drawbacks of User Choice (Selby Smith et al 1996). But ANTA argues that 'cost shifting is a distraction from the real issue of the importance for government to clearly define what it will fund and the further separate issue of what provider is best placed to carry out the training' (Selby Smith et al 1996, p15).

More generally, Anderson (1994) highlights the tendency in a demand-driven training market for providers to over-produce skills that are fashionable and in high demand in the short term, and to under-invest in training infrastructure and provision for areas where demand is low or in cyclical decline. Under-investment could lead to serious skills shortages over the longer term and an over-supply of graduates in particular occupations could reduce the labour market value of their qualifications, thereby contributing to higher unemployment. As Anderson argues, 'there are likely to be gaps and duplication in the provision of skills training in a market-driven system. In both cases there is a potential wastage of human talent and training resources' (Anderson 1994, p206).

Educational impact and consequences

The precise impact of competition and market reforms on the nature and quality of educational provision is difficult to assess on the basis of existing research. Market advocates hold that 'high cost or inefficient training providers will lose out through competition to those trainers providing a better quality or more efficient service' (Deveson 1990, p9). But as Fooks (1995) points out, there is a lack of empirical evidence to support such claims. Moreover, perceptions of quality are highly subjective and there are currently no agreed definitions or criteria for measuring and comparing quality in a consistent and meaningful way (ACG 1994b, Anderson 1994).

Most attention has focussed on the impact of competitive tendering on educational quality, which many analysts contend is likely to be adverse (ACG 1994b, Anderson 1994, Carmichael 1992, Yeatman 1994). If educational support services (eg libraries, study skills support; compensatory education) can be taken as one measure of educational quality, research points to a decline in quality and accessibility of such (resource-intensive) services in TAFE due to competition from low-cost private providers (Anderson 1994, 1995c; Kell, Balatti & Muspratt 1997). Other research suggests that competitive tendering may enhance quality provided that tender design processes and selection criteria balance price against quality considerations

(CESAC 1992, WADOT 1995, 1996). WADOT (1995) finds 'no evidence' of declining quality under competitive tendering, but notes that 'good comparative data is lacking to enable any real assessment of the impact of those processes on the quality of training' (WADOT 1995, p22).

Demand-side models of competitive resource allocation such as User Choice may have a negative impact on educational quality. The OECD notes that although demand-driven resource allocation may increase responsiveness to client needs, 'its greatest potential drawback is that by destabilising income flows it makes it difficult for institutions to maintain high-quality provision' (OECD 1995, p14). Fooks (1995) also argues that the instability arising from User Choice will have detrimental effects on the quality and amenity of public training infrastructure.

Research shows that competition and market reforms have increased the range of educational providers from which consumers can choose, primarily through the recognition of private providers (Anderson 1996c). However, as the vast majority of non-TAFE providers are concentrated in relatively narrow market segments, 'the benefits ... are less likely to be realised by clients seeking training in the non-services sector and in non-metropolitan areas, particularly rural and remote regions' (Anderson 1996c, p125). Despite increased choice of provider type, research suggests that the use of standardised competency standards as the benchmark for curriculum development and accreditation may have reduced choice and diversity in the type and quality of training programs available to clients (ACG 1994b, Anderson 1994).

There is a growing body of evidence to suggest that competition and market reforms are altering the organisation and culture of TAFE providers with potentially negative educational consequences. Commercial and financial pressures in TAFE have led to progressive shedding of low demand courses and resource-intensive access programs and support services in TAFE, regardless of their educational value or wider economic and social benefits (Anderson 1994). This trend has been accompanied by an increased emphasis on the development of more lucrative niche markets for international students, export education, and other fee-for-service activity. As a consequence, a growing proportion of staff time and resources is being diverted from educational activities to business development, marketing and promotional strategies (Anderson 1994, Hammond 1992). Anderson (1994, 1995c) and Miller (1997) find that pressures arising from recurrent budget cuts, corporate restructuring and commercialisation have forced teaching departments in TAFE to concentrate on maintaining economic viability rather than responding to the educational needs of students.

In a study of the impact of recent educational reforms on a major TAFE institute, Brown et al (1996) produce evidence of complex and contradictory effects. Entrepreneurialism and competition have opened up opportunities for rapid individual advancement on the one hand, but undermined traditional collegiate relations among TAFE teachers on the other. Market reforms, combined with budget pressures, have altered the educational focus of the institute with the result that 'marketability and entrepreneurial initiative are now highly valued, and courses not directly linked to vocational outcomes tend to be marginalised' (Brown et al 1996, p317). At the same time, they have provided traditionally under-valued teachers and departments with opportunities to innovate and achieve greater educational credibility. Managerial reforms are found to have professionalised some aspects of TAFE teachers' work, but the devolution of administrative responsibilities to has also reduced the time available for educational activities. Research by Kell, Balatti & Hill (1996) in TAFE Queensland tends to confirm these findings. In balance, the weight of research suggests that competition and market reforms have reduced TAFE's traditional commitment to educational values, and shifted its principal focus to income-generation and commercial activities.

Political impact and consequences

Market reforms may also have unintended and contradictory political consequences. Considerable emphasis is placed by market advocates on the need to strengthen accountability by devolving responsibility for outcomes to service providers. One consequence of this approach is that governments themselves can no longer be directly held to account for the financial and educational performance of sub-contracted providers (Anderson 1995a, Kell 1995).

Transparency of costs and funding processes is frequently highlighted as a precondition for effective market competition. Yet the conduct of competitive tendering processes on a 'commercial-in-confidence' basis obscures the processes and criteria employed by government departments to allocate public resources. For the same reason expenditure of government funds by contracted providers is shielded from public scrutiny. Democratic accountability appears therefore to have declined as a direct consequence of market reform in VET (Anderson 1995a, Ryan 1995).

Conversely, market advocates claim that consumer choice is a more effective and democratic mechanism than government planning for allocating resources in education and training (eg Chubb & Moe 1990, Sweet 1994). But as Marginson (1993) points out, such claims are difficult to substantiate.

Among the main effects of competition and market reforms in VET to date has been a growing reliance on private funding sources by public providers and a fragmentation of the organisational structure of the TAFE system (Anderson 1994, Brown et al 1996, Kell 1993). Foreshadowed reforms are likely to increase the degree of institutional and financial autonomy enjoyed by public providers with a consequential loss of control by government over their policy and resource priorities. Under these conditions it becomes more difficult for governments to promote public policy objectives and implement (non-market) reform in an integrated manner across different spheres of social and economic life (Anderson 1994, Kell 1995, Marginson 1993).

Research dilemmas and issues

The foregoing review of research confirms the need for further investigation of the impact and consequences of competition and market reform in the Australian VET sector. In the remainder of this paper, I shall briefly identify some of the key conceptual dilemmas and methodological issues which must be confronted if researchers are to contribute effectively to policy debate about the future priorities and directions of VET reform.

One of the first questions to be addressed is precisely what constitutes 'market reform' in VET? Do market reforms include, as some would argue, the introduction of Competency-Based Training? To what extent should policies and practices arising from public sector restructuring programs, such as the creation of corporate management and performance monitoring frameworks, be included within the definition? Or should the workings and effects of competitive funding mechanisms constitute the principal focus of such research? In other words, where should the boundaries be drawn?

Similarly, it can be argued that the so-called 'national training market' is largely an artificial policy construct which, in the wake of emerging trends such as globalisation and sectoral convergence, is becoming increasingly obsolete. Given the border-eroding imperatives of globalisation and new information and communications technology, together with the progressive dissolution of boundaries between secondary schooling, VET and higher education, is it any longer feasible to speak meaningfully of 'training markets'. What implications do these developments have for the manner in which research on the workings and effects of market reforms are structured and focused? How can this be done in such a way as to capture the complex dimensions, dynamics and ramifications of markets in VET?

A further layer of complexity is added when account is taken of the diverse market arrangements operating in different states and territories. Given the trend towards an integrated national market structure in Australia, to what extent does research need to address inter-state diversity and, if so, how? Are there more important dimensions of markets in VET with respect to social and economic consequences which demand more attention, for example differential impacts in metropolitan and non-metropolitan areas?

Assuming that agreement can be reached on what constitutes 'market reform', a secondary problem with analysing the impact and consequences of competition and market reform is that the training market does not presently constitute a pure market (ACG 1994b, Anderson 1996b, Lundberg 1994, Wiltshire 1997). This of course begs the further question, can a 'pure market', as imagined by neo-liberal reformers, ever exist? Market and non-market mechanisms, overlaid with elements of competition and cooperation, co-exist in current policy and resource settings in the VET sector. The complexity of current arrangements therefore makes it difficult to distinguish between the direct impact and potential consequences of these different elements. How should this issue be tackled?

The present lack of longitudinal data on a range of key indicators such as participation and finances in VET makes it difficult to undertake meaningful comparisons of change over time. This problem is compounded by changes in the scope and definitions used for major data collections, together with the incomplete and inconsistent nature of data relating to different spheres of activity in the training market such as private training providers (Burke et al 1996). What methodological implications do these issues have for researching markets in VET and how might they be addressed?

Another difficulty involved in evaluating the economic and non-economic consequences of competition and market reforms is the lack of appropriate definitions, evaluation criteria and measurement tools. ACG (1994b) argues that the effects of market competition may be 'partly quantifiable', particularly efficiency in the provision of standard training services. However, some will be 'impossible to quantify, particularly improved responsiveness to particular client needs, innovation, dynamism etc.' (ACG 1994b, p201). Given the problems posed by quantification, what alternative approaches should be used to measure and evaluate impacts and consequences?

Finally, market mechanisms in VET are relatively new and many reforms are yet to be implemented. In some cases the social and other consequences are only likely to become apparent over the longer term. As Coopers & Lybrand note in relation to the impact of youth training credits on the UK training market, 'fundamental changes were never ... realistically likely to happen in the short term' (1994, p2). The same qualification clearly applies to market reforms such as User Choice. This suggests the need for longitudinal research and evaluation projects. But in the relative absence of funds for such research, how can the long-term impact and consequences of market reforms be effectively investigated?

Conclusion

In view of the above analysis of existing research, few could doubt the imperative to investigate the workings and effects of competition and market reforms in the Australian VET sector (and beyond). The pace, scale and significance of current and impending competition and market reforms are undeniably great, and their potential consequences in social, economic, educational and political terms are likely to be substantial. The critical dilemma and challenge facing researchers in VET (as elsewhere) is how best to plumb the depths and unravel the complexities of such reforms.

Acknowledgment. This paper is based on research funded by the National Centre for Vocational Education Research Ltd. and published under the title of Review of research: Competition and market reform in the Australian VET sector (NCVER, 1997).

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Author Index

Damon Anderson 347
Tony Anderson 92
Allan Arnott 99

Jo Balatti 141
John Blakely 141
Katrina Ball 70
Mary Barrett 76
Ray Barker 135
Mary Barrett 1
David Beckett 171
Rowena Bell 82
Stephen Billett 258
John Blakely 141

Jane Cartier 301
Ralph Catts 179
Merrilyn Childs 229
Berwyn Clayton 252
Stephen Crump 92
Rick Cummings 246

Ian Falk 179, 217
Griff Foley 308
John Garrick 321

Shelley Gillis 179
Patrick Griffin 179
Barry Golding 60
Hugh Guthrie 205

Paul Hager 272
Graeme Harper 171, 313
Roger Harris 155, 186
Geof Hawke 267
John Henry 99
Angela Hill 141
Doug Hill 162, 327
Allyson Holbrook 135
Sonnie Hopkins 341
Robyn House 252

Pauline James 118
Peter Kell 141, 233
Sue Kilpatrick 82
Denise Kirkpatrick 321
Janene Lobegeier 162

Leo Maglen 5, 341
Rod McDonald 34
John McIntyre 1, 211
Jose Misko 289
Jitka Mulqueeny 334
Dianne Mulcahy 118
Sandy Muspratt 141
Charles Noble 327

Gregor Ramsey 56
Ian Robertson 282
Chris Robinson 12

Terri Seddon 128
Chris Selby Smith 23
Joy Selby Smith 23
Maire Sheehan 301
Michelle Simmons 155
Andrew Smith 327
Erica Smith, 162, 327
John Stevenson 45
Pam St.Leger 171

Veronica Volkoff 60
Regine Wagner 229
Kevin Ward 171
Graham Weaver 113
Greg Webb 195
Mark Werner 104
Frank Wyatt 186